

# **MATERIAL HANDLING** **FLOW**

**HANDLING • AUTOMATION • PACKAGING AND SHIPPING**

**MARCH 1954**

**FRANCHISE  
CIRCULATION**

**PREREQUISITE FOR COST CONTROL**

**PAGE 61**

**SCALE MODELS—COSTLY TOYS OR USEFUL PLANNING AIDS?**

**PAGE 68**

**HANDLING FOR LONG AND HEAVY HAULS**

**PAGE 76**

**AUTOMATIC PALLET LOADERS: ANOTHER STEP TOWARD AUTOMATION**

**PAGE 81**

**STITCHING AND STAPLING EQUIPMENT**

**PAGE 102**

**9½ TONS LESS TARE WEIGHT = \$20,300**

**PAGE 107**

**NEW EQUIPMENT**

**PAGE 42**

**USEFUL LITERATURE**

**PAGE 136**

**Flow Circulation**

**{ 35,827 FLOW BASIC  
108,509 FLOW QUARTERLY**

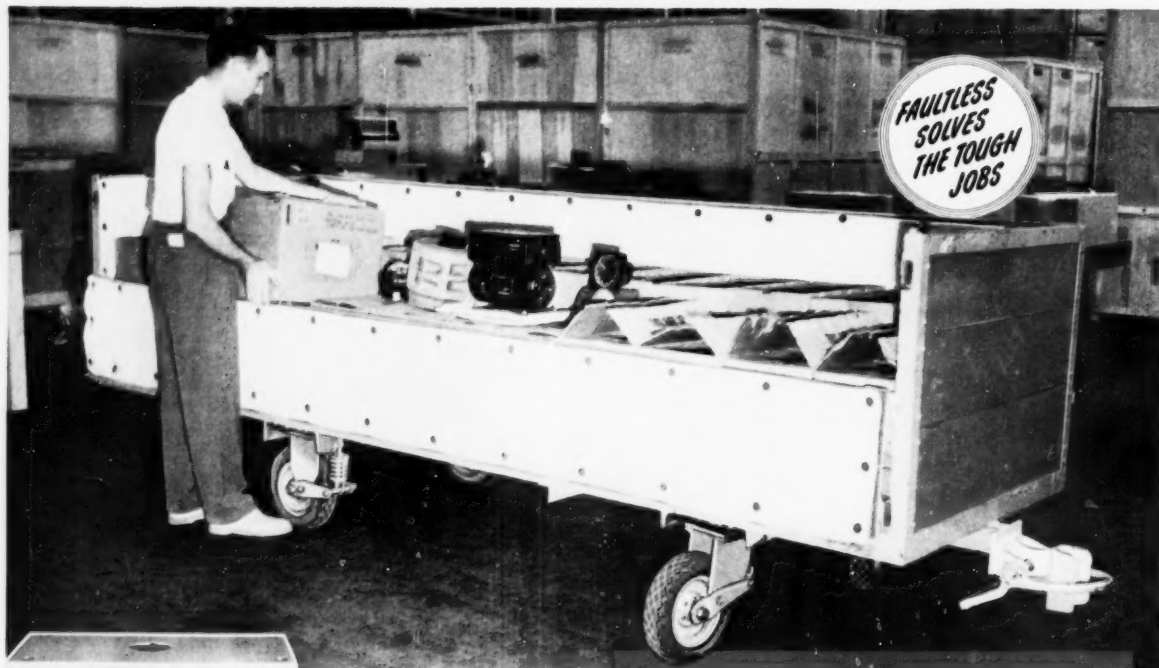
NOELTING



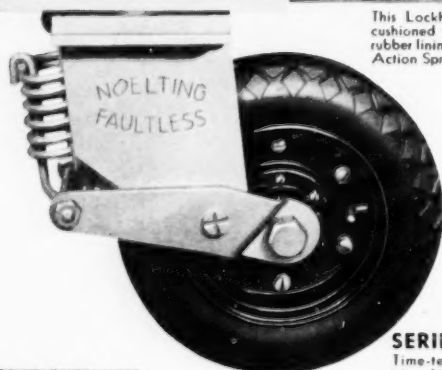
No. 2 in a series of

Caster Achievements for men in industry

## LOCKHEED AIRCRAFT CORP., MARIETTA, GEORGIA ... MOVES FRAGILE INSTRUMENTS SAFELY



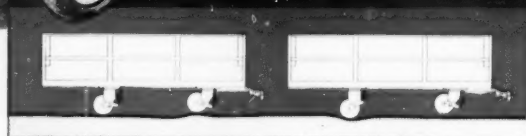
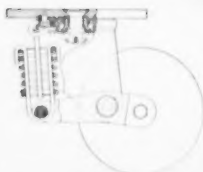
This Lockheed truck provides a cushioned ride with thick foam-rubber lining and Faultless Double Action Spring Casters.



### SERIES SH300

Time-tested by industries, this Faultless Caster is acclaimed for its use of standard, interchangeable wheels.

absorption of high impact shocks through use of large, durable springs under constant compression spring and draw bar assembly a separate, interchangeable member. Choice of spring tensions allows specialized use of this caster, according to loads carried and terrain encountered. Available with hard tread semi-steel wheels, vulcanized rubber tired wheels, Plaskite hard tread wheels and pneumatic cushion-ride wheels.



The Faultless SH 332-12 x 3 Caster has a unique construction that maintains a level load on trucks when moving over irregular floors. Wheels contact floor surface at all times—eliminate bounce—don't raise truck when mounting obstacles or drop when passing over depressions in the floor.

How Lockheed Aircraft Corporation, Marietta Division, materials handling engineers move the B-47's multitude of electronic devices provides the basic information of how many industrial materials handling problems may be solved. A truck was needed to move the material without damage to the airplanes' electronic equipment. In order to facilitate their movement and carry the load safely through the production locations and inspection stations, the Transportation Department of Lockheed decided upon a foam-rubber lined truck mounted on Faultless Double Action Spring Cushion Casters equipped with pneumatic wheels. Lockheed chose the Faultless line after careful study of available cushion ride casters. Faultless Casters were selected since they best fulfilled the requirements of providing a smooth, jolt-free, low cost ride for the electronic instruments.

We can solve *your* caster problems, as we have for Lockheed Aircraft. Simply call your local Faultless Caster Distributor listed in the yellow pages of your phone directory. Or write us today.

**FAULTLESS CASTER CORPORATION**

EVANSVILLE 7, IND.

Branches in Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Grand Rapids, High Point, Houston, Indianapolis, Los Angeles, New York, Philadelphia, St. Louis, Toronto, Westfield, Ontario

Circle No. 49 on Reader Service Card for more information



# FOR JOB-FITTED SOLUTIONS TO YOUR TIRE PROBLEMS

See your Goodyear Dealer—  
distributor of America's  
most complete line of Industrials



**Solid Fact For Solid Users.** Use Goodyear's Famous All-Weather Tread Industrial Solid (illustrated above) for top traction and high resistance to cutting and chipping—even on rubber-damaging wet surfaces.

**W**HATEVER your particular industrial tire problems might be—tread—chipping—oil damage—insufficient traction, cushioning or flotation—the man to see for a cost-cutting solution is your nearby Goodyear Dealer.

He is not only experienced in dealing with these problems, he's also equipped to job-fit your operation from the most complete line of Industrial Tires in America today.

You'll find your Goodyear Dealer has over 100 different solid tire sizes plus a complete line of pneumatic and semi-pneumatics—all compounded in either UNIVERSAL chip-resistant or OR Neoprene oil-, acid-, and chip-resistant compounds. What's more, he will specify the most efficient tread—smooth, grooved, All Service or the famous All-Weather—for your plant's floor surfaces.

And thanks to convenient warehouse location around the country, your Goodyear Dealer can promise quick service on your order.

Why not call your Goodyear Dealer soon? Or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

# GOOD YEAR

INDUSTRIAL TIRES

All-Weather, All Service—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio  
Circle No. 58 on Reader Service Card for more information



#### \* "IN-BETWEEN HANDLING"

Short distance hydraulic manipulation of materials too heavy for manual handling, yet not requiring high-priced power driven equipment.

More than 40

# BIG JOE® Models

These new materials handling FIRSTS added to a line of more than 40 "BIG JOE" hydraulic lift trucks increase the growing importance of "IN-BETWEEN HANDLING" to all industry. This advanced method for putting hydraulic power to work with greater effectiveness *vastly increases the economy of materials handling.*

#### MADE TO FIT — TO ECONOMIZE

For example "BIG JOE" lift trucks work in congested areas where power-driven units can not operate. You can select the exact model to fit the requirements of *each individual department...* thus avoid paying for more capacity than needed. No special operators are required—anyone can operate a "BIG JOE". You can have mechanical handling suited exactly to all requirements without

expensive maintenance. You can obtain the same lifting and stacking efficiency as provided in a power-driven fork truck—yet your investment is only a fraction of the cost.

#### USED EVERYWHERE

IBH\* equipment has been used successfully in practically every industry. Manufacturing plants, chemical processing plants, food and drug warehouses, furniture storage concerns, appliance warehouses, terminals and docks etc. use "BIG JOE" lift trucks extensively.

"BIG JOE" offers a choice of foot operated and battery operated 6 and 12 volt system units—fork and platform types—lever control, push button control or throttle control . . . all guaranteed for quality.



"HYDRAULIC HANDLING FOR EVERY DEPARTMENT"

## BIG JOE

MANUFACTURING COMPANY

900-08 Jackson Blvd., Chicago 7, Illinois



Send for your copy of the informative booklet "IBH—The Economical In-Between System for Handling Materials".

©1954 Big Joe Mfg. Co.

Circle No. 15 on Reader Service Card for more information

## STAFF

President and Publisher  
IRVING B. HEXTER

Executive Vice President  
LESTER P. AURBACH

Vice President  
EDWIN M. JOSEPH

General Manager  
RUSSELL F. OAKES

Editor  
EDWARD H. LEIGHTEN

Associate Editor  
STANLEY S. GREENE

Packaging & Shipping Editor  
JOHN D. VELARDO

Assistant Editor  
MARGARET E. GREENE

Production Managers  
WILLIAM L. JERSE  
NORMAN H. STEWART

Art Director  
ALARIC MAUSSER

Franchise Manager  
HAROLD F. BEHM

## SALES OFFICES

### FLOW EDITORIAL AND BUSINESS OFFICES

All communications should be addressed to FLOW Magazine, 1240 Ontario Street, Cleveland 13, Ohio. Phone Superior 1-9622

Cleveland Office  
DAVID E. SAWYER  
1240 Ontario Street  
Cleveland 13, Ohio  
Phone Superior 1-9622

New York Office  
LEE HAAS, DISTRICT MGR.  
NORMAN B. HASSELRIS  
Room 803  
40 E. 42nd St.  
New York 17, New York  
Murray Hill 7-3420

Chicago Office  
LLOYD WILLOUGHBY, MGR.  
CHARLES F. GEYER  
Suite 1613-1615  
520 N. Michigan Ave.  
Chicago 11, Illinois  
Whitehall 3-1655

Los Angeles Office  
ALAN CAZIER  
Room 1003  
3440 Wilshire Blvd.  
Los Angeles 5, Calif.

London Office  
JOHN A. LANKASTER  
5 New Bridge Street  
London E.C., 4, England  
City 4815



FLOW Magazine is affiliated with the Industrial Publishing Company which also publishes:

FLOW QUARTERLY  
PRECISION METAL MOLDING  
APPLIED HYDRAULICS  
INDUSTRY AND WELDING  
OCCUPATIONAL HAZARDS  
COMMERCIAL REFRIGERATION  
AND AIR CONDITIONING

# MATERIAL FLOW

MARCH, 1954  
VOL. 9, NO. 6

## CONTENTS

### FEATURES

Handling Analysis—Prerequisite for Cost Control .....	61
Good Planning Makes the Difference .....	66
Scale Models—Costly Toys or Useful Planning Aids .....	68
LP-Gas Conversion Saves \$300 Per Fork Truck .....	72
Cost Cutting Ideas .....	74
Handling for Long and Heavy Hauls .....	76
Automatic Pallet Loaders: Another Step Toward Automation .....	81
Special Delivery Is Routine For "Mechanical Mailman" Conveyor ....	84
Rolls Racked for Unitized Handling .....	86

### PACKAGING AND SHIPPING SECTION

Packaging and Shipping Idea of the Month .....	101
Stitching and Stapling Equipment .....	102
9½ Tons Less Tare Weight = \$20,300 .....	107
Humidity Conditioning Aids Packaging .....	110
Underpass Drops Overhead—Beats Shipping Roadblock .....	114
What's New in Packaging and Shipping Equipment .....	117
Shipping Nails, Screws and Heavy Metal Parts .....	119
What's New in Packaging and Shipping Free Literature .....	123

### DEPARTMENTS

Advertisers' Index .....	177
Association and Society News .....	24
Classified Advertisement Section .....	176
Highlights of the Month's News .....	30
Letters to the Editors .....	6
Literature Featured in Ads .....	48
Men in the News .....	34
News From the Sales Field .....	16
News, Views & Trends .....	10
What's New in Equipment .....	42
What's New in Useful Free Literature .....	136

FLOW is indexed regularly by Engineering Index, Inc.

#### SUBSCRIPTION RATES

United States and possessions—	Canada—\$4.00 per year, \$6.00 for
\$3.00 per year, \$5.00 for 2 years.	2 years.
Subscriptions in the United Kingdom: £1.10 per annum, payable in Sterling to our London Office.	Foreign—\$5.00 per year.
	Single copy price—30 cents.

Published Monthly

"Acceptance under section 34.64 P. L. & R. authorized at Pontiac, Illinois."

Copyright 1954 by The FLOW Publishing Company



*You can't be sure  
you're Handling it  
as Efficiently As Possible  
until you've Checked with*

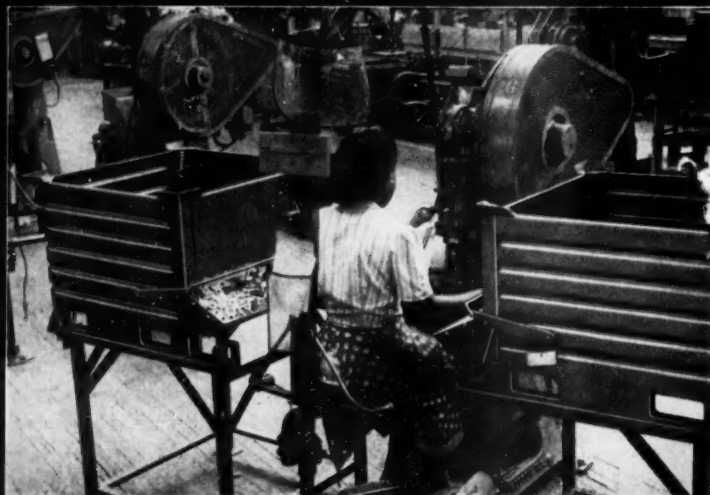
# POWELL

*"The All-Steel Handling Container People"*

Because no other materials handling container concern has the years of experience—the years of designing and producing all-steel cold formed equipment—that belong to Powell.

Powell originated this type of equipment and has been a leading producer since 1920. This background is your assurance of the most efficient equipment possible, highest quality product and service at prices that are right.

When next you're in the market for materials handling equipment remember it's only good business to check with the leader—make sure you have an estimate from Powell—representatives in leading industrial centers across the nation.



One of many Powell originals. A hopper box to which the customer gives full credit in boosting his production rates to new high levels.

**THE POWELL PRESSED STEEL CO., HUBBARD, OHIO**

ORIGINATORS OF ALL STEEL COLD FORMED MATERIALS HANDLING EQUIPMENT  
(IN GREATER YOUNGSTOWN)





Another Example of How  
**SPECIAL ENGINEERING**  
Can Solve Your Truck Problem



## **\$70,000 Saved as Rails become Roadway**

**The Problem**—The Pittsburgh & Lake Erie Railroad recognized the great need for an industrial truck at their East Youngstown repair yards. Manual delivery of heavy sets of wheels, end gates, car doors, etc., to car repair tracks was costly in man hours and highly hazardous. But how could a rubber tired truck operate across the rails unless the large yard were paved? This would cost \$70,000.

**The Solution**—by **ELWELL-PARKER ENGINEERS**—First they decided an E-P mobile crane with swinging boom would handle the loads—it

could spot wheels or end gates into position on the repair work with speed and safety. Next, to solve the terrain problem, flanged wheels were placed on the crane. So it rolls right up to the job on a parallel track, then swings the new part to just where it is needed . . . Paving cost has been avoided, and many operations are now done in as little as one-fifth the time with far greater safety.

Elwell-Parker's Special Engineering can save money for you, too. It has produced the answer to hundreds of unusual load or

operating problems. When a standard E-P truck will not suffice, Elwell-Parker's *greater* experience in Special Engineering is available to you without cost or obligation.

**NEW FOLDER**—Case histories on E-P Special Engineering, and Special Attachments for standard trucks. Write The Elwell-Parker Electric Company, 4233 St. Clair Ave., Cleveland 3, Ohio.

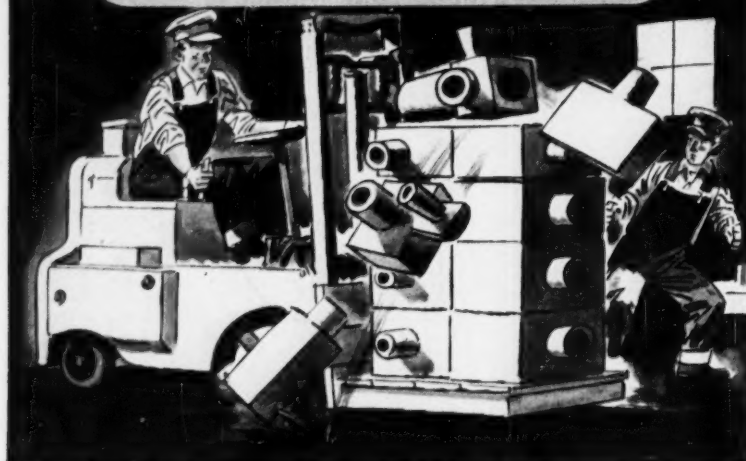
**ELWELL-PARKER**  
**POWER INDUSTRIAL TRUCKS**  
Established 1893

Circle No. 46 on Reader Service Card for more information



Circle No. 107 on Reader Service Card

**Eliminate this hazard!**



## Get clean, smooth floors in record time with the **TENNANT** INDUSTRIAL FLOOR MACHINE



When trucks lurch and bump over grime-incrusted floors, costly accidents are bound to happen! But with the powerful, heavy-duty TENNANT FLOOR MACHINE one man alone can smoothly remove all soilage in minutes. Keeps floors clean, smooth, safe and ready for traffic.

WRITE TODAY for performance data, photos and Bulletin 81.5.

**G. H. TENNANT COMPANY**  
2576 Second Street North  
Minneapolis 11, Minnesota



16" REVO-TOOL



16" WIRE BRUSH

**FOR HEAVY SOILAGE** Tennant 16" REVO-Tool accessory has 336 steel cutters. Revolves at 1760 RPM to cut grime loose with smooth hammer-mill action. Gets results never possible before.

**FOR AVERAGE SOILAGE** Tennant 16" Steel Wire Brush attachment smoothly, quickly removes ordinary soilage from factory floors. Picks up dirt at same time. Comes in 3 standard gauges.

### Check These Machine Features

- **REDUCES HAZARDS** by keeping floors clean, smooth and dry.
- **ELIMINATES CHEMICALS** or need for soap or water.
- **CLEANS IN 1 OPERATION** by cutting grime loose, smoothing surface and picking up soilage.
- **IS SELF PROPELLING** to provide rapid, easy, one-man operation.
- **CUTS CLEANING COSTS** and requires far less labor.
- **DOESN'T INTERFERE** with plant operation, can be operated at any time.

Circle No. 131 on Reader Service Card for more information

## LETTERS to the editors

### Fiber Board for Bags

To FLOW:

On page 132 of your October 1953 issue a photograph is shown where a light-weight chestnut fiber board is used to support a unitized load of bagged goods. It is said that this fiber board base is expendable and can accompany the shipment to its destination.

I would like to receive any information that you might have concerning the name of the manufacturer of these fiber boards.

H. G. Stolzer  
Mill Project Engineer  
Orthopedic Products  
Johnson & Johnson

*The manufacturer whose product we photographed has been advised of the above inquiry.*

### A Mistake To Miss

To FLOW:

Please send us a copy of the 1953 FLOW index, and accept our thanks for same.

Miss Leola Michaels  
Carboloy Department  
General Electric Company

*Copies of the FLOW index for 1953 are still available, and are free for the asking. Reader Michaels has been forwarded her copy. Do you have yours?*

### Narrow Aisle Stacking

To FLOW:

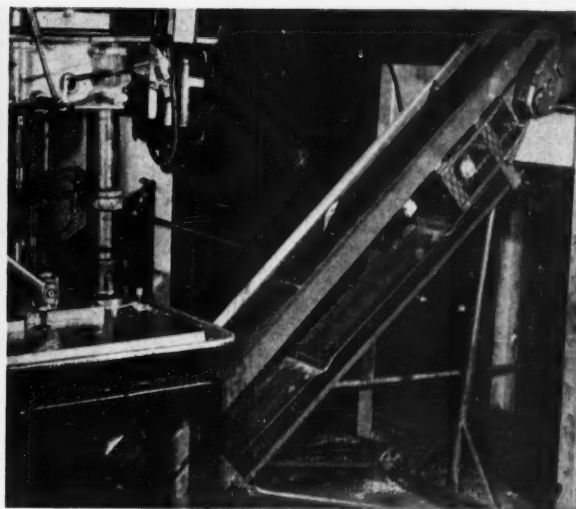
We have for some years received your magazine and find it very informative. At present time we are looking for an electric high lift stack truck of the operator walk type, suitable to be used in very narrow aisles. We wish to





#### HANDLING COSTS CUT WITH CONVEYOR

Youngstown Alloy Casting Corporation uses Rapistan gravity wheel conveyors to expedite movement of molds from forming, through drying oven to assembling and on to pouring floor. Further savings are effected by spraying and assembling molds while still on the conveyor, which then passes through drying oven at 600° F. Conveyors had been cutting costs for seven years when picture was taken.



#### MACHINE OUTPUT INCREASED

Utica Drop Forge & Tool Company increases operator's productive hours with this Rapistan "LP" cleated belt conveyor. Forgings are automatically elevated from trim press and deposited in sloping bottom bin for delivery to next operation. Operator does no handling; is freed for full time production. Rapistan cleated belt conveyors are available in light, medium and heavy-duty models.

## Free *Rapistan*® field reports tell Profit Stories like these



#### ASSEMBLY OPERATIONS STREAMLINED

Magnetic starter assemblies in the pans flow smoothly from one work point to the next on Rapistan RW gravity wheel conveyor lines in this large midwestern plant. Operators receive pans from one conveyor line and pass them along on another, keeping work space uncluttered and increasing output. Lines are "pitched" just enough to move pans at speed desired. Rapistan wheel conveyor is available in many widths and capacities. Straight sections, curves and spurs can be arranged to cut costs in any plant layout.

#### • Gain from this experience



Send today for fast-reading, fact-filled reports on handling problem solutions in *your* field. Full details on equipment installed, savings achieved. Free 16-page catalog also included. Indicate your interest on coupon and mail to:

**The RAPIDS-STANDARD COMPANY, Inc.**  
164 Rapistan Building, Grand Rapids 2, Michigan

Please check your business classification:

☐ Manufacturing ☐ Agricultural ☐ Wholesale ☐ Retail

Check reports below which will be of greatest benefit to you:

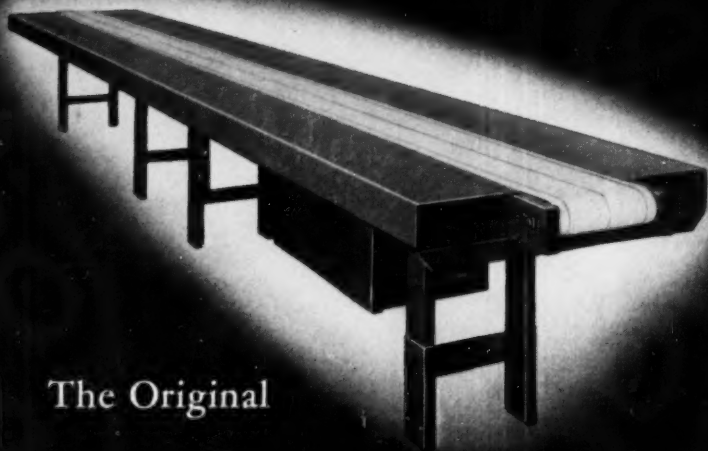
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Aircraft Parts    | <input type="checkbox"/> Fruits, Vegetables | <input type="checkbox"/> Meat Packing      |
| <input type="checkbox"/> Auto Supplies     | <input type="checkbox"/> Furniture          | <input type="checkbox"/> Metal Stamping    |
| <input type="checkbox"/> Beverages         | <input type="checkbox"/> Grain and Feeds    | <input type="checkbox"/> Paint Products    |
| <input type="checkbox"/> Building Supplies | <input type="checkbox"/> Grain Milling      | <input type="checkbox"/> Paper, Publishing |
| <input type="checkbox"/> Canneries         | <input type="checkbox"/> Grocery Store      | <input type="checkbox"/> Pharmaceuticals   |
| <input type="checkbox"/> Chemicals         | <input type="checkbox"/> Heating Equip.     | <input type="checkbox"/> Power Tools       |
| <input type="checkbox"/> Cosmetics         | <input type="checkbox"/> Home Appliances    | <input type="checkbox"/> Sugar Refining    |
| <input type="checkbox"/> Dairy Products    | <input type="checkbox"/> Laundry Services   | <input type="checkbox"/> Tobacco Products  |
| <input type="checkbox"/> Fabricated Metals | <input type="checkbox"/> Leather Products   | <input type="checkbox"/> Warehousing       |
| <input type="checkbox"/> Floor Coverings   | <input type="checkbox"/> Machine Parts      | <input type="checkbox"/> Waste Materials   |
| <input type="checkbox"/> Food Products     | <input type="checkbox"/> Magazines, Newsp.  | <input type="checkbox"/> Wood Products     |
| <input type="checkbox"/> Freight Terminals |   |  |

There are many other Rapistan Field Reports. If your business is not listed, please tell us about it.

**Rapistan®** BETTER CONVEYING EQUIPMENT  
CONVEYORS: gravity and power belt • INDUSTRIAL CASTERS • WHEEL-DRY TRUCKS

Representatives in all Principal Cities Throughout the World

Circle No. 108 on Reader Service Card for more information



The Original

# Unitable®

## BELT CONVEYOR

**For Assembly, Inspection, Packaging**

The MOST VERSATILE slider-bed belt conveyor on the market today. *Over 4000 satisfied users say so.*

The UNITABLE, with its integrated **POWER PAC Drive**, will save you money in initial cost, upkeep and performance. Full specifications upon request.

NEAR YOU is a distributor of Conveyor Specialty Co., Inc. Belt Conveyors, Slat Conveyors, Gravity Conveyors, Press Conveyors, "Unitrough" Belt Conveyors, Reciprocating Lifts and Complete Package Handling Systems.



# CONVEYOR SPECIALTY COMPANY, INC.

36 Newport Ave., North Quincy 71, Mass.

Circle No. 33 on Reader Service Card for more information

## LETTERS

*Continued*

use this truck for putting material on pallets, on racks, and also for moving material through the shop. I know that some companies do feature equipment of this type that will operate in a minimum of space.

Would you be good enough to send us the names of a few firms that we may contact in this connection.

J. B. Mitchell

Assistant Works Manager

Morrow Screw & Nut Company Limited

*Reader Mitchell has been furnished with the desired names and addresses.*

### **Interested in Making Boxes**

To FLOW:

I was very impressed by your interesting article on the making of corrugated boxes by the shipper when the volume of boxes is low. (Page 106 of the October 1953 issue).

We would like to know who makes the equipment illustrated in the picture that accompanies the article.

W. Forbes

Methods Engineering Dept.

Taylor Instrument Companies

*We are pleased to see that copies of FLOW are retained for future use, as evidenced by the October issue referred to above. Reader Forbes has been supplied with the requested information.*

### **The Flow Directory**

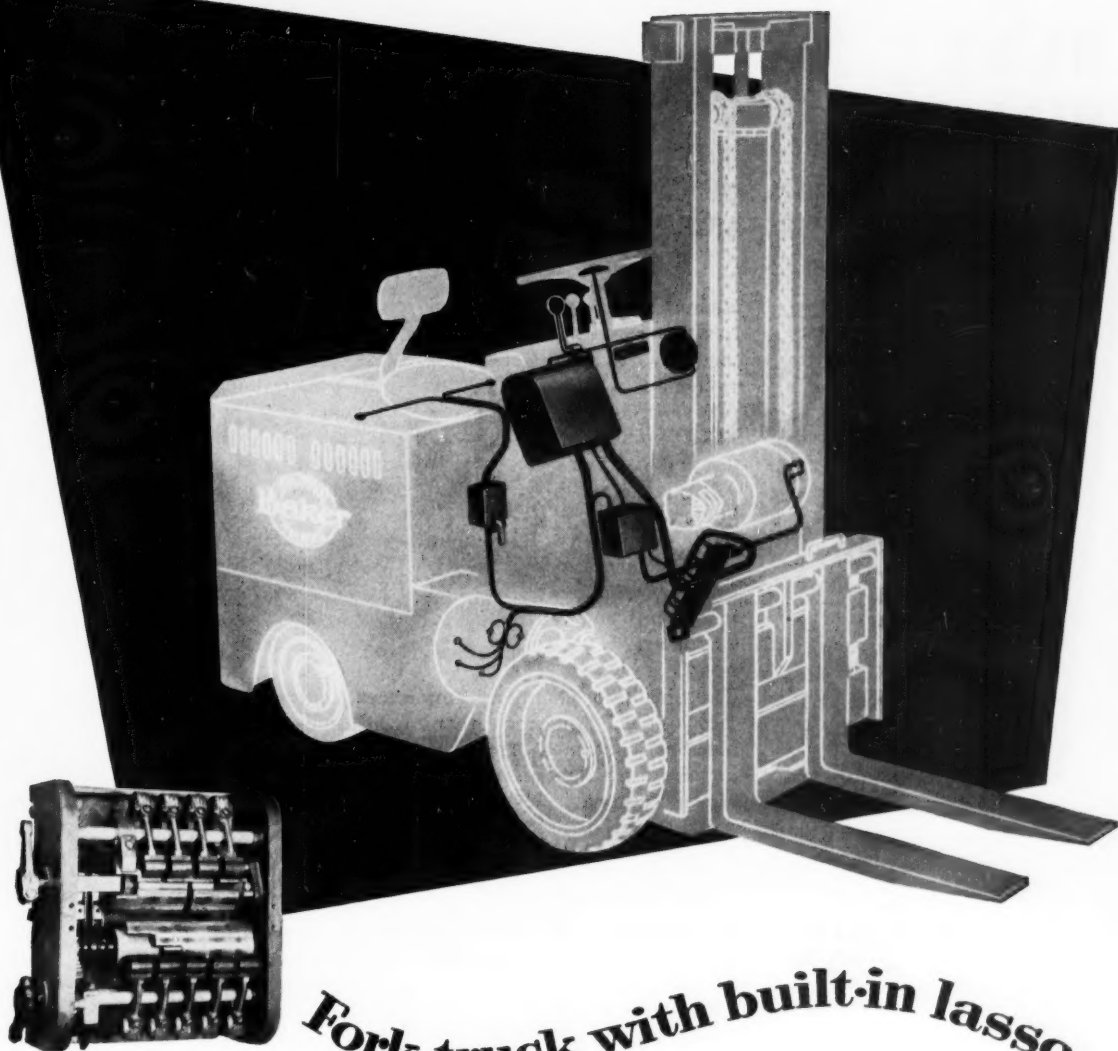
To FLOW:

Please advise availability and price of "Material Handling Directory" for 1954-55.

Mrs. O. M. Greer

Phillips Chemical Co.

*The 1954-55 FLOW Directory is ready for distribution. The big, new Directory contains 772 pages, 136 more than the previous issue, yet the price is the same—\$6.50.*



## Fork truck with built-in lasso ... for cowboy drivers

● Over-enthusiastic truck jockeys can't hurt Baker Fork Trucks or loads carried (or themselves) by jumping from "low" to "high" or forward to reverse.

Baker drum-type controllers take motor speed in successive steps through acceleration stages, no matter how "heavy" the foot on the accelerator.

Jack-rabbit starts, with resulting motor burn-outs, are impossible. Dynamic braking slows truck to a smooth stop, sparing driver and load, and acts as auxiliary brake on steep grades.

Motor strain or jolt from sudden direction

changes is prevented by requiring truck to come to a virtual stop before reversing circuit applies.

All this adds up to safer operation for driver, truck and load, less down time, lower repair bills and longer truck life.

For more detailed information on Baker Fork Truck features, write for 4-color sketch book—Bulletin 64. The BAKER-RAULANG Company, 1219 West 80th Street, Cleveland 2, Ohio.

**Baker**  
industrial trucks

Circle No. 13 on Reader Service Card for more information



# NEWS VIEWS TRENDS

---

## **EASTERN RAILS PLAN RATE CUTS**

Eastern railroads have agreed on rate reductions of from 18 percent to 20 percent on many iron and steel products, and have filed the new tariffs with the Interstate Commerce Commission. Edgar V. Hill, chairman of the Traffic Executive Association of the Eastern Railroads, said the proposed new rate schedule, applied to shipments of 40,000 pounds or more, would put rail tariffs on a parity with rates now maintained by competitors of the railroads. On shipments of 80,000 pounds or more, the proposed schedules are uniformly 5 cents lower than the 40,000-pound rates. Hill also said the new schedule for 40,000-pound shipments would allow "fabrication in transit". This is a special arrangement whereby a shipper can, in effect, pay a single rate for two movements, where the movements involve shipping steel from a mill to a fabricator's plant, and subsequently to the fabricator's customer.

## **SISALKRAFT TO MERGE**

The Sisalkraft Company announces a merger with its manufacturing division, The American Reinforced Paper Company. The organization has been renamed American Sisalkraft Corporation. The firm will move certain key personnel to its plant headquarters in Attleboro, Mass. Regional sales offices will remain in Chicago, New York and San Francisco. "The change," says W. N. Stevenson, president, "will mean a more integrated, efficient organization resulting in improved facilities for better service and better products for our customers."

## **PACKAGING FORUM**

The Technical Institute of Packaging Association held the First National TIPAC Forum at the King Edward Hotel, Toronto, last month. Objective of the one-day technical forum was to explain the newest trends in packaging research and to promote better packaging techniques in the various consumer and packaging trade groups.

## **HINDE & DAUCH BUILDS IN CANADA**

Construction near Toronto of one of the largest and most modern corrugated paper shipping box factories in the world has been started by Hinde & Dauch Paper Company of Canada, Ltd. The new one-story building will provide 280,000 square feet of production space, and it is expected that the new factory will be in operation before the end of the year. The new factory, to be patterned after the recently-completed Hinde & Dauch plant at Montreal, is located on the Queen Elizabeth Highway in the township of Etibocoke, about six miles west of Toronto.

## **GEORGIA TECH SHORT COURSE**

April 22 and 23 are the dates set for the annual Materials Handling Short Course held at Georgia Institute of Technology, Atlanta, Ga., according to Course Director, Colonel John B. Day. Prominent speakers throughout the industry have been invited to appear for the two day event.

## **MOTOROLA OPENS NEW PARTS DEPOT**

Motorola Communications and Electronics Inc. has established a new regional parts depot in Dallas. The new parts depot, an integral part of the southwestern regional sales office, provides a convenient source of supply for users of Motorola 2-way radio throughout the territory. Manager of the new parts depot is Richard J. Clark.



# WHY MONARCH IS "King of the Solids"

## *Specialization in*



### INDUSTRIAL TIRE RESEARCH AND DEVELOPMENT

For more than 20 years, MONARCH's research men have concentrated on developing tire stocks that feature outstanding wear resistance and service life. Tests that simulate severe lift truck operating conditions are made *continually* to analyze and improve these special stocks. As a result, MONARCH supplies performance-proven industrial solid tires . . . the best available today.

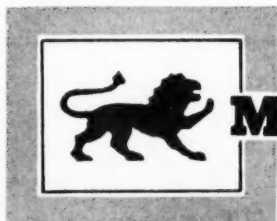
### INDUSTRIAL TIRE DESIGN

MONARCH engineers, working with lift truck manufacturers, have created tire and tread designs that cushion shocks and shock loads . . . assure maximum stability on short turns and high lifts . . . have superior non-skid qualities . . . steer easily . . . wear evenly under hard usage. These characteristics minimize maintenance costs and fatigue for vehicles, loads, floors and drivers.

### INDUSTRIAL TIRE PRODUCTION

MONARCH specializes in solid and Mono-Cushion types of industrial pressed-on tires. As a leading supplier, MONARCH has a type and size to meet every lift truck requirement. All research, engineering and production facilities are directed to the continual improvement of the complete line. MONARCH tires are mass-produced by modern equipment. High quality and performance are assured through carefully controlled production techniques and by selection of only the best raw materials.

YOUR NEAREST MONARCH TIRE DEALER is listed in the Yellow Pages under "Trucks-Industrial-Parts & Supplies" or "Tires-Industrial". If current directory does not have a listing, write direct for complete catalog and name of nearest dealer.



**THE  
MONARCH  
RUBBER COMPANY**

**SPECIALISTS IN INDUSTRIAL SOLID TIRES**

210 LINCOLN PARK • HARTVILLE, OHIO  
7-255 General Motors Bldg., Detroit 2

Circle No. 98 on Reader Service Card for more information

1954-MR

# Announcing the

Feature by feature,



**POWERWORKER "26" Pallet Truck**  
4000 and 6000 lbs. capacity



**POWERWORKER "26" Platform Truck**  
4000 and 6000 lbs. capacity



**POWERWORKER Tilting Fork Stacker**  
1500, 2000, 2500 and 3000 lbs. capacity





# POWERWORKER "26"

## it's engineered to meet your own handling requirements

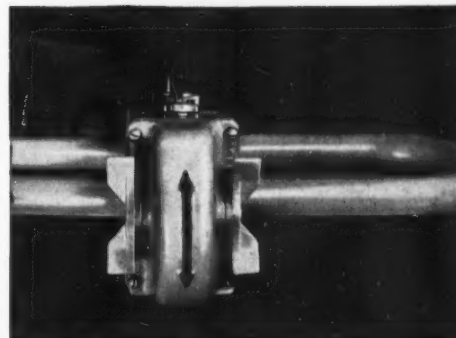
Here's a line of electric trucks designed and engineered with the user in mind . . . the 1954 POWERWORKERS. Detailed job-studies in customer plants, warehouses and terminals, dictated the features of the POWERWORKER "26". No truck on the market today can equal the combination of user-benefits which the POWERWORKER "26" provides:

- **Maximum Maneuverability**—Only 26" maximum lost length (the truck is only 26" longer than the load), the shortest standard truck on the market.
- **Light Weight**—Minimum overall weight is maintained by complete fabrication, providing maximum strength for the toughest jobs.
- **Stability**—All operating units, including battery, are mounted in an underslung position close to the floor, providing a low center of gravity for load stability.
- **Great Efficiency**—A double reduction of spur gears transmits power from the motor to the driving axle—maximum ton-miles at minimum power cost.
- **Balanced Load Distribution**—Double lifting cylinders uniformly distribute load for smooth, easy lifting and lowering.
- **Safety**—Protective guard for operator protection, either walking or riding. Deadman switch cuts power when brake is applied and handle returns to vertical position when released by operator.
- **Easy to service**—All operating units are readily available without getting under or dismantling the truck—maximum accessibility. The standard drive wheel tire is quickly demountable.

We invite you to compare the 1954 POWERWORKER with any truck on the market. Feature by feature, it's engineered for lowest-cost handling, long-life under tough working conditions. It's easy on the operator, easy on the maintenance man.

For details on the POWERWORKER "26"—the one electric truck built to *your* specifications—call your local Clark dealer, listed in the Yellow Pages of your phone book. Or simply send in the coupon for descriptive literature.

The POWERWORKER "26" is at your disposal under Clark's Pay-As-You-Go lease plan. Ask your Clark dealer about this low-cost leasing plan.



Simplified travel controls for two speeds in either direction with operator protection.



Positive spring-applied brake on motor shaft transmits braking force through a gear ratio of 22-1 to driving wheel. Safety with smooth performance.



Control panel is mounted on the power head, sealed in a dust tight box—no long flexing wires or current collectors—all contractors have silver-to-silver contacts for long life.

# CLARK EQUIPMENT

POWERWORKER SECTION  
Industrial Truck Division  
CLARK EQUIPMENT COMPANY  
Battle Creek 13, Michigan

Circle No. 28 on Reader Service Card for more information

- ☐ Please send POWERWORKER literature.  
☐ Have representative call.

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

*Continued*

### **GALION ALLSTEEL ACQUIRES AUSTIN**

The Galion Allsteel Body Company has announced acquisition of sales and manufacturing rights to the complete line of Austin Overshot tractor loaders patented and built by John Austin Manufacturing Company, Denver. In a statement by President Oliver C. Henkel, the Galion, Ohio, firm anticipates that all Austin activities will be moved to Galion Allsteel's plants in Galion and in Mansfield, Ohio, very shortly. The Galion sales plan will be announced at a later date, according to Henkel. However, he stated his company plans to market the Overshot loader through established equipment distributors in all sections of the country.

### **BULLDOG PALLET USES NEW FASTENER**

Bulldog Pallet Company has been licensed to use a new type of fastener, Tube-lok, which replaces bolts in the manufacture of pallets, according to Richard M. Duff, president. The fastener is a metallic tube which, after being inserted into a hole drilled in the boards being joined, is flared and crimped at both ends. The ends are counter-sunk into the wood during the crimping process. The fasteners are said to possess strength and holding power comparable to bolts, yet will afford savings that range to 25% less than the cost of bolted pallets. The firm has been granted a national franchise for use of these fasteners by the inventor, C. W. Lyman, who also holds the patent.

### **FIFTH WESTERN PACKAGING EXPO**

The Fifth Western Packaging and Materials Handling Exposition, which will be held at San Francisco's Civic Auditorium August 17, 18 and 19, will underscore a basic development in the packaging industry, according to Kenneth K. Dean, chairman of the Advisory Board.

### **PACKAGING MACHINERY INSTITUTE**

The spring meeting of the Packaging Machinery Manufacturers Institute will be held on April 3-4 at the Hotel Dennis, Atlantic City, according to Robert T. Foreman, of R. A. Jones & Company, who is president of the institute. The Hotel Dennis will be headquarters hotel for PMMI during the Annual Packaging Exposition.

### **COLLEGE-INDUSTRY LEADERS MEET**

Twenty-five educators, industrial executives and editors met at the Commodore Hotel in New York to discuss "Analyzing Material Handling Problems" in the Second Seminar sponsored by the College-Industry Committee on Material Handling Education. Under the leadership of Professors H. T. Amrine of Purdue University and B. W. Saunders of Cornell, the group of makers and users of material handling equipment discussed various methods of analyzing material handling problems with teachers of engineering from Columbia, Illinois Institute of Technology, N.Y.U., CCNY, Lehigh and Lafayette. Participating for the first time as members of the College-Industry Committee were the newly-elected members: George Smith, international president of the American Material Handling Society and Professor J. R. Huffman of the University of Southern California.

### **MINIATURE TOWMOTOR**

A small working model of the Towmotor Model 480-P fork truck has been developed to help industry plan and work out material handling and warehousing problems on a scale basis. The model is an exact replica of its big brother, and is eight inches long, five and one-quarter inches high, and two and three-quarters inches wide. The forks may be raised or lowered, the mast tilts and the model rolls on rubber tires that are, in miniature, identical to those used on the standard trucks. The miniature truck is available from Towmotor Corporation, Sales Promotion Department, 1226 East 152nd Street, Cleveland 10, Ohio.

# THE ONLY FIXTURE SPECIFICALLY DESIGNED FOR CORRECT SHELF *and* BIN ILLUMINATION

THE NOVEL SHAPE  
DOES THE TRICK

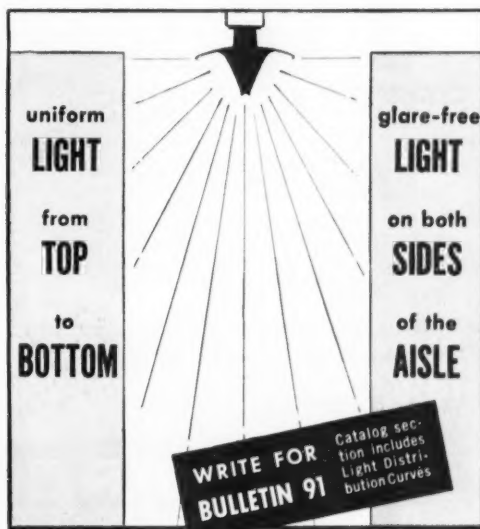


Stocklites promote good vision, efficient work and employee morale. This stockroom is flooded with controlled, glare-free light to its farthest recesses. Orders are handled faster, more accurately. Costs go down . . . profits up.

FILL ORDERS FASTER, MORE ACCURATELY WITH THE

## APPLETON STOCKLITE

End spotty, harsh, eye-tiring lighting once and for all! Install *Appleton Stocklites* . . . special fixtures that wipe away murky gloom, and let you read labels, small parts numbers, order slips . . . *all the way* from top bin to floor level. The novel shape does the trick . . . prevents wasted light, assures even diffusion, reduces eye fatigue and speeds up order filling with fewer errors. *Stocklites* are attractive, distinctive, permanent fixtures finished entirely in white, triple-coated, vitreous-fired porcelain enamel . . . easily installed, quickly cleaned and extremely corrosion resistant. Inquire now. See how *Appleton Stocklites* give more light, better light from your present lamp wattages.



Sold Nationally Through Electrical Wholesalers

**APPLETON ELECTRIC COMPANY**  
1729 Wellington Avenue • Chicago 13, Illinois



**REFLECTORS EASILY  
REMOVED and CLEANED**  
4 Mounting Styles  
Separable design — no  
tools needed. Four mount-  
ings: pendant, right an-  
gle, feed-thru and outlet-  
box with Separable key-  
less or pull-chain sockets  
... 1/4 turn release and  
spring-cushioned for firm  
contact, longer life. Take  
5 standard lamps—50 to  
200 Watts.



Explosion-Proof  
Fixtures



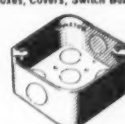
Malleable Iron  
Outlet Fittings



Industrial  
Lights



Automatic  
Rewinders



Outlet Boxes, Covers, Switch Boxes

Rely on **APPLETON** . . . The Standard for Better Lighting

Circle No. 161 on Reader Service Card for more information

# Choose the hoist *that* fits the job!

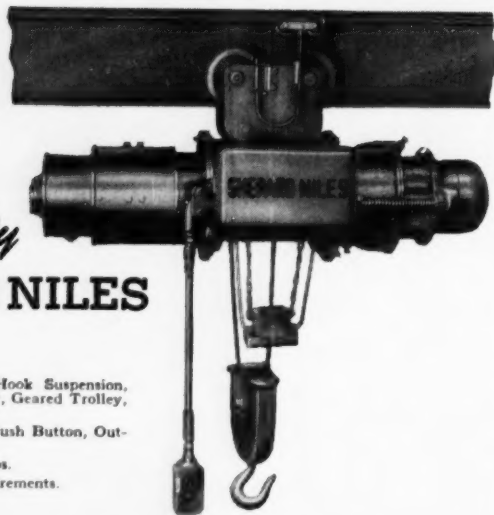
## Heavy Duty SHEPARD NILES Hoist

Types: Lug Suspension, Hook Suspension, Base Type, Push Trolley, Geared Trolley, Motor-driven Trolley.

Controls: Pendant Rope, Push Button, Outrig, Remote.

Capacities: 500 to 40,000 lbs.

Speeds: To meet your requirements.



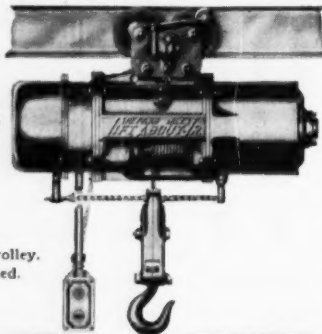
**IT PAYS** to choose the right hoist for your lifting job . . . the wrong choice can be costly! Let a Shepard Niles representative guide you in selecting the hoist that best suits your needs. He's a specialist in through-the-air handling . . . knows which model, capacity and controls will be right for your use.

## Light Service SHEPARD NILES *LIFT ABOUT JR.*

Types: Lug Suspension, Hook Suspension, Push Trolley.

Controls: Single Speed, Push Button, Rope Operated.

Capacities: 250, 500, 1000, 2000 lbs.



CRANES: Capacity 1-450 Tons



Hoists: Capacity 1-20 Tons

## SHEPARD NILES CRANE AND HOIST CORPORATION

SHEPARD NILES Crane and Hoist Corp.  
2748 Schuyler Ave., Montour Falls, N.Y.

- ( ) Please send me your new Lift About-Jr. Bulletin.
- ( ) Please send me your Shepard Niles Hoist Bulletin.
- ( ) Have a Shepard Niles representative call on me.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

Circle No. 122 on Reader Service Card for more information

**SEND  
FOR  
BULLETINS!**

**news from the  
SALES FIELD**

Thomas M. Murphy has been appointed District Sales Manager of Lewis-Shepard Products, Inc., for the Chicago area. Manager of the Chicago Sales Office since 1952, Mr. Murphy has been with Lewis-Shepard seven years. His office is located at 8844 W. 47th Street, Lyons, Illinois.



**T. M. Murphy**

Two firms have recently been added to the Nutting Truck and Caster Company sales representatives. They are: Materials Handling Ltd., Tulsa, Oklahoma, covering Eastern Oklahoma, and Stryco Sales, Inc., Albuquerque, New Mexico, covering New Mexico and Western Texas.

New District Manager for Alvey Conveyor Mfg. Co. of St. Louis, is Curran S. Easley. With headquarters in Greenville, South Carolina, he will cover textile and other industrial plants for the conveyor manufacturer.

New facilities for Automatic Transportation Company's Hartford, Conn. representative are now located at 610 Farmington Avenue. Firm name is Clyde Equipment Company.

Lift Trucks, Inc. has announced the appointment of Materials Handling Equipment, Inc., Des Moines, Iowa, as their

**FLOW • MARCH, 1954**

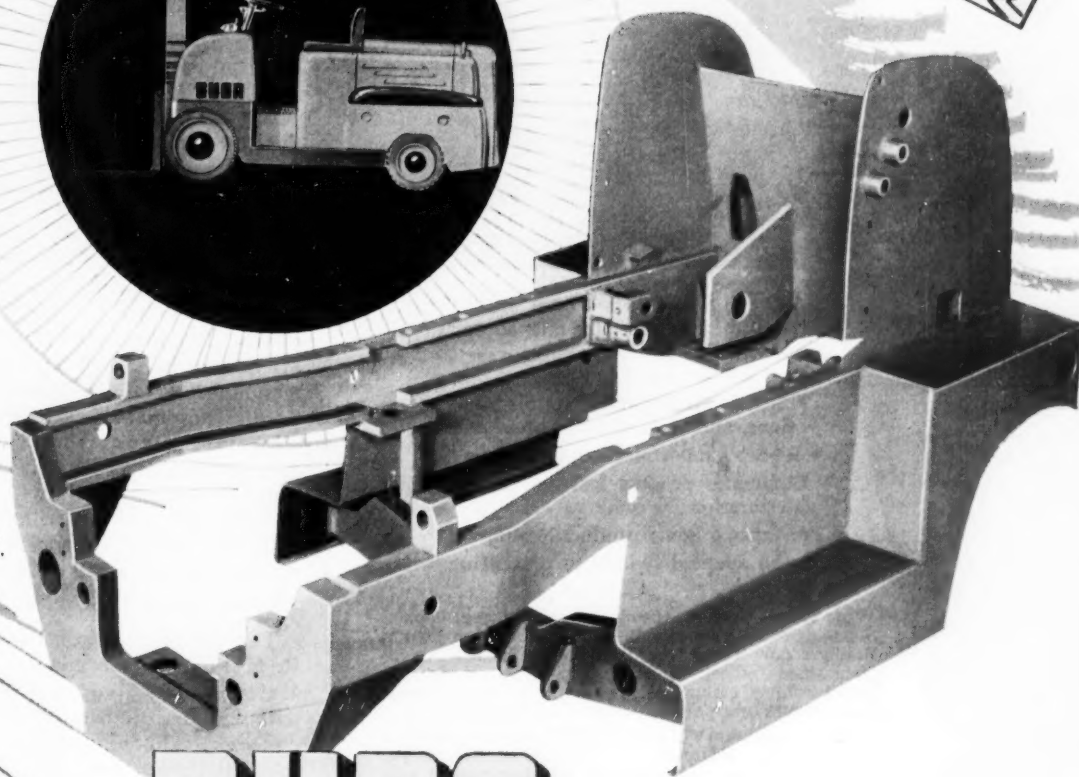
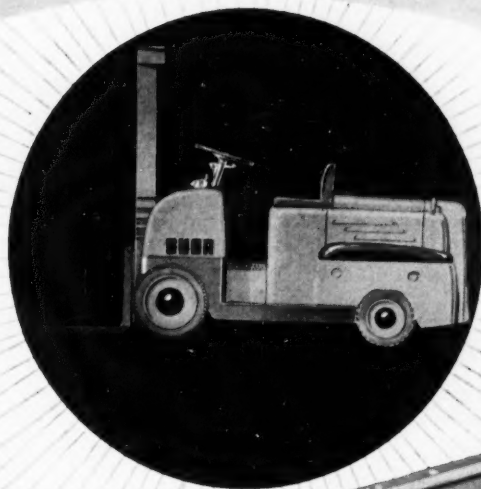


There's more to  
**BUDA**  
 than meets the eye!

Take its rugged frame  
 for example!

The backbone of *any* lift truck is its frame. For on the frame, the truck is built. With this in mind, Buda designed its revolutionary, new automotive type frame. The awkward, old-style box frame and its space-taking "X" bracing were abandoned. In its place you'll find main members of high carbon steel. You'll find deep-sectioned cross members . . . three of them for maximum torsional rigidity. The space gained permits use of heavier, more durable parts . . . parts that are easy to get at when necessary. There are no nuts and bolts to come loose on the Buda frame. It's joined with high strength steel welds and reinforced at all critical points for permanent unit strength. What does this mean to you as a Buda Lift Truck user? It means you get a stronger, more accurately built truck . . . an easily serviced, longer-lasting truck. It means, too, that Buda is a most economical truck.

**You Need . . .** this new Buda facts book. Serves as standard of comparison for all lift trucks. Send for your free copy now!



**BUDA**

The Buda Company, Harvey, Illinois  
 A Division of Allis-Chalmers Manufacturing Co.

Diesel and Gasoline Engines, Lifting Jacks, Railroad Equipment, Earth Drills, Materials Handling Equipment

Circle No. 19 on Reader Service Card for more information

# building bulk storage?

Investigate **TOTE** for SAVINGS from **20% to 40%!**  
SYSTEM

These substantial savings have actually been proved by Tote System users over a period of years. For example, here are the comparative cost figures for one large bulk material handler:

**Cost of Five Silos for Conventional Storage** (complete with conveying equipment)... **\$350,000**

**Cost of TOTE SYSTEM Equipment to Provide Same Capacity:**

295 #A-110	
TOTE Bins	\$125,000
Auxiliary Equipment	15,000
Hoists, etc.	10,000
Warehouse	45,000

**Total... \$195,000**

**SAVING of \$155,000**



...and that's only the **BEGINNING!**

## TOTE...

FILL IT  
TRANSPORT IT  
DISCHARGE-WEIGH  
BLEND IT  
STORE IT

See our exhibit in Booth  
654 at the National  
Plastics Exposition  
June 7-10,  
Public Auditorium  
Cleveland, Ohio

Tote and  
Tote System  
Reg.  
U.S. Pat.  
Off.

**TOTE SYSTEM** — built around easily handled aluminum bins plus automatic filling and discharging equipment — saves all along the line because it:

- Speeds up weighing and blending operations, automatically and accurately
- Reduces labor and handling costs
- Eliminates product loss, contamination or deterioration
- Preserves original product quality
- Can be adapted readily to present or future plant layout

Tote System is equally effective for inter-plant or in-plant handling of all types of bulk materials, including liquids. Products now handled by Tote System installations include among others, flour, sugar, salt, soap, detergents, cement, whiting, carbon black, powdered coffee, powdered plastics, fluorescent powders, ethocel, and polystyrenes.

Tote System engineers will survey YOUR plant to determine the savings YOU can effect — at no cost or obligation. Meanwhile, write for new illustrated literature packed with facts and pictures.

**TOTE SYSTEM, INC.**

**630 So. 7th BEATRICE, NEBRASKA**

Circle No. 134 on Reader Service Card for more information

## SALES FIELD

*Continued*

Eastern Iowa representative. Activities of the firm will be directed by C. R. Hall, Vice President.

Arch R. Smith has been named Vice President and General Manager of **The Frank Colker Co.**, Detroit distributors for **Towmotor Corporation**. With a record of 31 years of experience in the industrial truck field, Smith was formerly Vice



**A. R. Smith**

President and General Sales Manager of **Ready-Power Company**. He is a native of East Chicago, Indiana, and one of the original founders of the **Material Handling Institute**. According to **Towmotor Corporation**, this appointment is the first in a planned expansion for maximum customer service.

**Rowe Methods Inc.**, Cleveland, Ohio, has been appointed exclusive distributors in North-eastern Ohio by the **Mult-A-Frame Division, Ainsworth Manufacturing Corp.**, Detroit. Announcement was made by C. W. Choromanski, Executive Vice President of the Cleveland concern. **Paul DuBois**, Assistant Chief Engineer, will direct Rowe's new distributing activities, with **Lawrence Cotton** serving as his assistant.

The appointment of **Donald R. McPhail** to the position of **Materials Handling Engineer** with the **Detroit District Sales Office**, was announced today by the **Pittsburgh Steel Products Co.** A graduate of the University of Michigan, McPhail was formerly with **Eastern Michigan Industrial Sales Co.**

*(Continued on page 126)*

**FLOW • MARCH, 1954**



**LO-HED**  
*fits like a glove*

*because it's*  
**JOB ENGINEERED**

Crescent LO-HED is job engineered to conserve every foot of storage space in low, narrow areas. Its 48-inch lift permits two-tier stacking without danger of damage to roof or load. Optional Side-Shifter moves loads 6 inches to right or left.

**SAFETY FEATURES:** Operator's head lower than mast-head. Low, compact lines...no high front or super-structure.

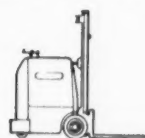
LO-HED also available with a 68-inch telescopic lift.

Write for catalog 535 on the complete Barrett Line.

**B** **CRESCENT TRUCK COMPANY**  
(Division of Barrett-Cravens Co.)  
1155 Willow Street  
LEBANON, PENNSYLVANIA  
**BARRETT**  
ONE MAN DOES MORE THAN 3 OR 4... WITH A BARRETT

Barrett  
Handling  
Equipment

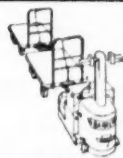
#### INDUSTRIAL TRUCKS FOR EVERY JOB



**AISLE SAVER**  
Stand-up model.  
Extremely  
maneuverable.  
1,000 to 4,000 lb.



**PALLETXO**  
Electric truck for  
pallet loads.  
4" hydraulic lift  
4,000 to 6,000 lb.



**RADOX.**  
Radio Remote Control.  
No operator necessary.  
Saves in storage and  
order picking time.



**PALLETIER**  
For standard plant  
and warehouse  
material handling.  
1,000 to 8,000 lb.



**LIFT-A-LOFT**  
For overhead  
maintenance work.  
Raises 20 ft. in 20 sec.



**TRACTORS**  
For trailer towing.  
Battery powered.  
For all practical  
trailer trainloads.

Circle No. 14 on Reader Service Card for more information

THERE'S A **NEW KING** OF THE LIFT TRUCKS



CAPACITY RC-150 15,000 LBS.  
RC-160 16,000 LBS.  
RC-180 18,000 LBS.

**ROYAL PERFORMANCE WITH  
KING SIZE LOADS...FOR ALL INDUSTRY**

A real "king" when it comes to moving more tonnage per day... in any weather! Hystalug makes the new RC-150 a true "mudder"—setting new performance records under the most adverse weather and ground conditions. Exceptional stability and maneuverability speed up handling of tough capacity loads, even on the most difficult kind of job. Plus advanced operating and engineering features never before offered by any lift truck. You won't really know how the new ease and responsiveness of operation increases driver efficiency until you drive the RC-150 yourself! Call your Hyster® Dealer today, or write for Booklet No. 1287 to:

*Featuring the new*  
**HYSTALUG**  
*All-weather performance*

**THERE'S PROFIT IN  
HYSTER  
POWER**



**HYSTER COMPANY**

2931 N. E. Clackamas Street ..... Portland 8, Oregon  
1031 Myers Street ..... Danville, Illinois

**FOUR FACTORIES:** Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands  
Circle No. 70 on Reader Service Card for more information





**every study shows a  
handling saving**

**80 TONS OF SUGAR PER DAY**

**SAVES \$30 ON EVERY CAR UNLOADED**

**RETURNS 84% OF ITS COST**

Many companies are checking their handling problems against the American MonoRail Case Study File of "Engineered Applications." The file contains a series of case studies taken from many successful American MonoRail installations. One company saved \$30.00 on every car unloaded. Another doubled metal finish production. A glass plant moved 22 tons of glass batch per hour. Another installation returned 84% of its cost in one year. These are just a few of the many studies covered.

If you want to lower your handling costs, speed up production and cut maintenance overhead, let us send you this file. Just drop us a line on your business letterhead, asking for "Engineered Applications File F-1."



**AMERICAN**

OVERHEAD  
HANDLING  
EQUIPMENT

**MonoRail** COMPANY

13129 ATHENS AVENUE • CLEVELAND 7, OHIO

Circle No. 5 on Reader Service Card for more information



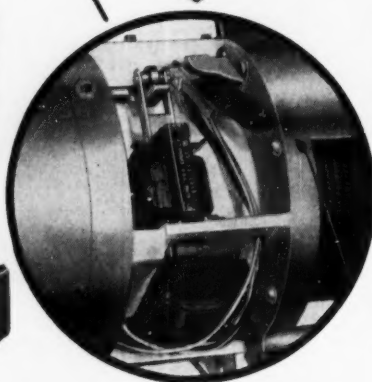
# WRIGHT HOISTS...Tops In

## WRIGHT

Frame 1  
Parallel-mounted  
Speedway  
1/4 to 1-ton  
capacities



Removal of cover  
exposes these parts  
for easy maintenance.



## See how WRIGHT Saves Maintenance Costs

The total cost of any electric hoist you buy is the original purchase price **PLUS** what it costs you to maintain it. The Frame 1 WRIGHT Hoist illustrated here is an outstanding example of what can be done to simplify servicing of a well designed hoist.

By simply removing four screws, you have full accessibility of the electrical and mechanical parts which require attention. Controller can be removed, equipped with new points, and put back in a matter of minutes. When transformer, limit switch, or solenoid coil need replacement, they are quickly and easily replaced by removing side cover.

They *never* need adjustment.

Adjustments for brake wear are made easily and quickly on the WRIGHT Frame 1. A novel cam which applies brake has three positions (two for taking up wear) which allow for three million brake applications.

Compare such ease, or necessity, of adjustment with that of the hoists you are now using... or thinking of buying. Compare the guaranteed duty cycles of any other hoists with those of the WRIGHT. Compare the motor and brake limitations. Compare... and buy WRIGHT.

SEE your WRIGHT Hoist distributor right away  
or write our York, Pa., office for literature

ACCO



Wright Hoist Division  
**AMERICAN CHAIN & CABLE**

York, Pa., Chicago, Denver, Detroit, Los Angeles, New York,  
Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

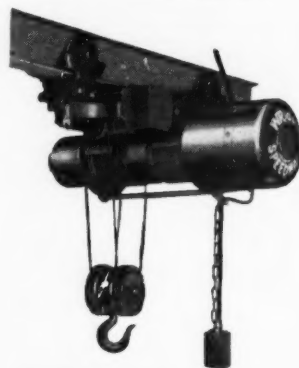
Hoists  
Trolleys  
Cranes

### Maintenance Features

- 1 **FRAMES**  
strong, ductile
- 2 **GEARS**  
alloy steel
- 3 **BRAKES**  
duty cycle exceeds limitations  
of NEMA motor specifications
- 4 **MOTORS**  
NEMA specifications
- 5 **SERVICE ACCESSIBILITY**  
end and side covers quickly  
removed for complete accessibility  
of brake assembly, controller  
relays, solenoid, limit switch,  
and transformer

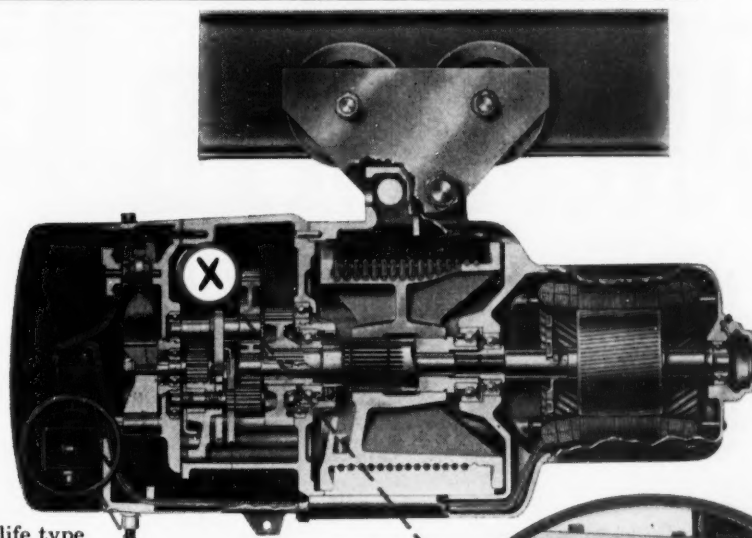


**WRIGHT Model L-1**  
Long Lift Speedway  
1/4 to 1-ton capacities



**WRIGHT Model WH-1**  
Close Headroom  
Speedway Hoist  
1/4 to 1-ton capacities

# Maintenance-Saving Features



## A BRAKE SOLENOID

Heavy duty, long-life type with hardened roller which actuates brake cam lever. Replaced quickly when side cover is removed.

## B LIMIT SWITCH

Positive-acting type with silver alloy contacts which reduce arcing. Readily accessible and easily replaced.

## C TRANSFORMER

Heavy duty, long-life type with abundance of power. Should replacement ever be necessary, it is done quickly and easily.

## D CONTROLLER

Heavy duty type with non-fusing, hard alloy silver contact surfaces. Completely enclosed in dust-proof housing yet readily accessible when new points or coils are required.

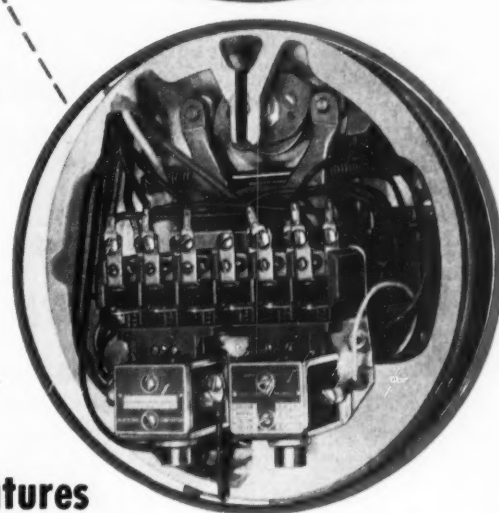
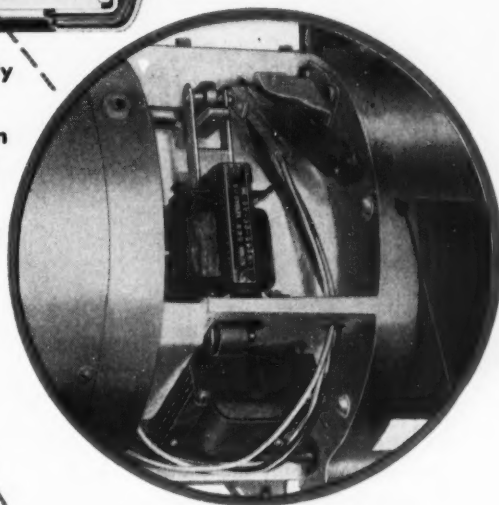
## E BRAKE CAM

Double-acting type with unique three-position settings. Original factory setting allows for one-third lining wear. Two field settings allow for additional take-ups so maximum lining life is assured. Designed for three million brake applications.

## F BRAKE SHOES AND DRUM

Two-shoe, contracting type with pressure applied by two life-long springs. Permanently set at factory.

See how quickly  
you can get  
at these parts in  
the **WRIGHT**  
Frame 1  
Speedway  
Hoists



Buy **WRIGHT**

Only **WRIGHT** gives you  
these Maintenance-Saving Features

Remember —

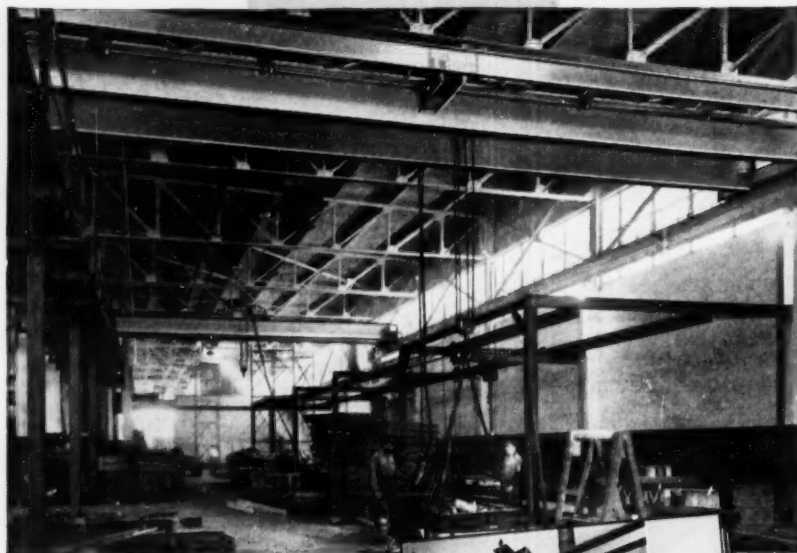
**Purchase Price + Maintenance = Total Cost**

Circle No. 4 on Reader Service Card for more information

When considering Industrial Cranes  
in Capacities up to 15 Tons . . . Be  
Sure You Have the Facts About . . .

# CRANEMASTER

**TOP QUALITY . . . LOW COST!**



No other overhead cranes of comparable quality are more conservatively priced or more dependable in operation. This explains why the **Cranemaster** is used in so many plants to **STREAMLINE PRODUCTION** and **PARE DOWN COSTS** . . . also why so many firms specify **Abell-Howe Cranes** again and again. Some are using 5, 10, even 20 and more of these service-proven units—because they have found them economical to buy . . . to operate . . . to maintain.

We invite you to make a check and comparison of our specifications and quotation to find just how much your crane dollar actually can buy at . . .



Ask for a copy  
of our **NEW**  
**Cranemaster**  
Catalog No. C120

**ABELL-HOWE**  
COMPANY

53 West Jackson Blvd.  
CHICAGO 4, ILLINOIS

Circle No. 162 on Reader Service Card for more information

## association and society NEWS

● The Power Crane and Shovel Association held its annual meeting December 18 at the Drake Hotel in Chicago. The following officers were elected:



J. R. Steelman



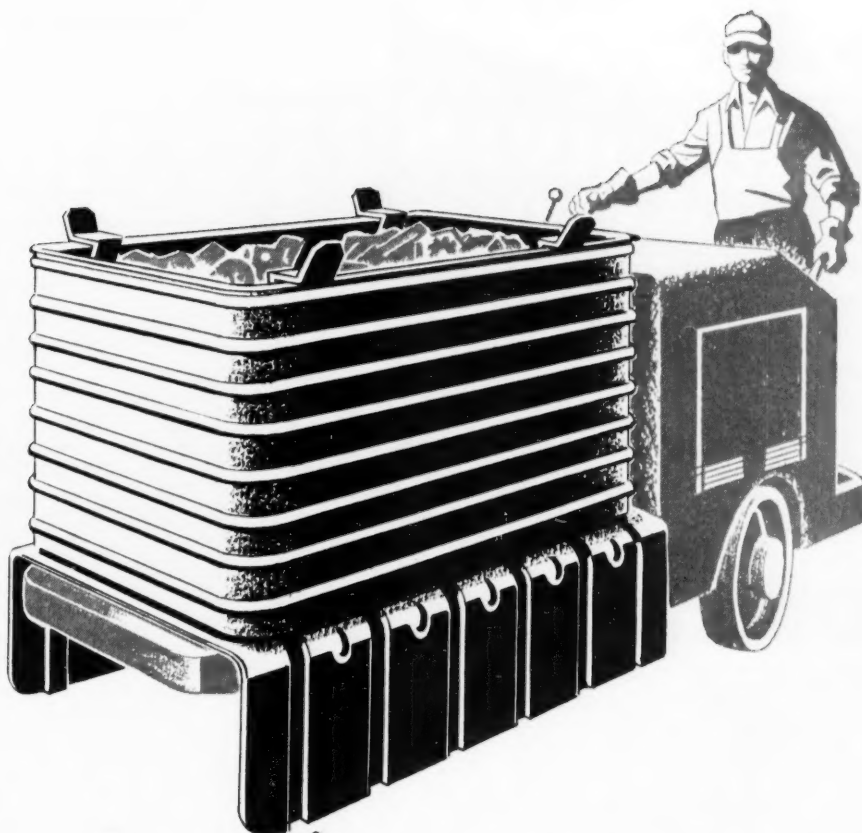
W. W. Walb

President, J. R. Steelman, vice president of the Koehring Company; Vice President, Walter W. Walb, president of the American Steel Dredge Co., Inc.; Secretary and Treasurer, Herbert S. Blake, Jr. The Association is comprised of 17 leading manufacturers of material handling and excavating equipment.

● The Packaging Association of Canada held its 2nd Canadian Package Design Forum in Toronto on January 21. Robert G. Neubauer delivered the feature address. His subject was "The Package—Infinite Selling Tool". Discussion covered the planning of a package in terms of the consumer market. Neubauer is a three-time winner of the All-American Packaging Awards.

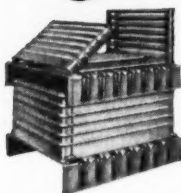
● The American Materials Handling Society, Inc., and the Institute of Materials Handling, United Kingdom, were affiliated on January 9. Purpose of the affiliation was for international advancement of the material handling profession, and to promote understanding and cooperation be-





## *Designed* TO SPEED PRODUCTION

**PB-127**  
Collapsible Box



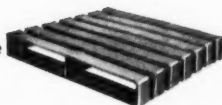
**P-135**  
Bar Carrier



**P-1 Skid**



**P-16-S**  
Semidouble face  
steel pallet



Republic Steel Boxes and Skids keep production lines running smoothly. Design and construction features of Republic Boxes and Skids help speed movement of materials, conserve storage space, produce savings in all phases of materials handling.

Fabricated from heavy gage steel sheets, Republic Boxes and Skids feature deep reinforcing ribs for maximum strength and rigidity. Maintenance and upkeep are held to a minimum. Available in a wide range of sizes to meet the requirements of the individual job, Republic Steel Boxes and Skids can be used in combination with lift trucks, cranes or hand-operated units.

Republic Engineers are available for consultation on materials handling problems without cost or obligation.

Write for illustrated catalog on the complete line of Republic Materials Handling Equipment.

### REPUBLIC STEEL CORPORATION

#### *Pressed Steel Division*

6202 Truscon Avenue, Cleveland 27, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, New York

*Republic*  
**MATERIALS HANDLING EQUIPMENT**

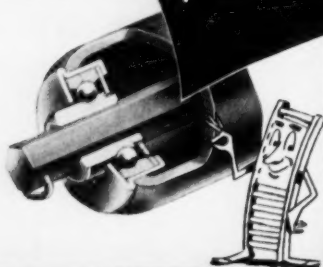


Circle No. 160 on Reader Service Card for more information

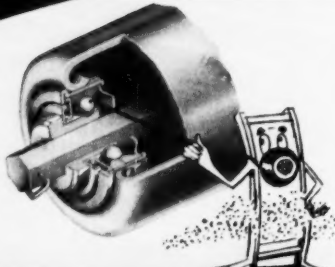
*Better Built*

# BUSCHMAN ROLLER CONVEYORS

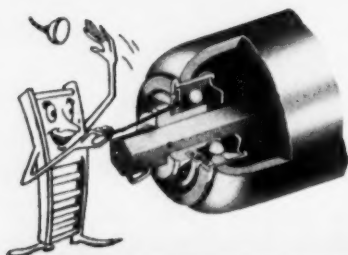
*Feature:*



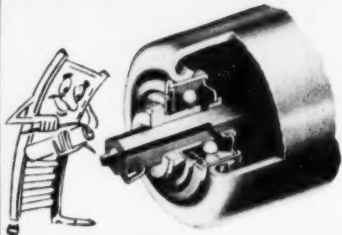
Plain Ball Non-Lubricated Bearings



Dustproof Labyrinth-Sealed Bearings



Grease-Packed-For-Life Bearings

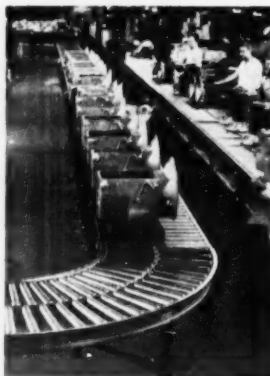


or Pressure Lubricated Bearings

## TO MEET YOUR REQUIREMENTS

In roller conveyors, it's the bearing that counts! And BUSCHMAN conveyors use only performance-proven bearings... engineered for long life and trouble-free operation in every type of service. No matter what normal operating conditions may be, BUSCHMAN has a conveyor pre-engineered to meet your needs.

Conveyors are available with various types of rollers and frames, in different sizes and spacings, and in any width from 6 inches on up. BUSCHMAN can supply 45° and 90° curved sections, switches, spurs, work stations and other components to provide a complete, efficient materials handling system.



For Complete  
Details, Write For  
16-page Catalog  
No. 60 Today.



**THE E. W. BUSCHMAN COMPANY**  
4450 Clifton Ave. • Cincinnati 32, Ohio

COMPLETE CONVEYOR SYSTEMS FOR ALL TYPES OF INDUSTRIES • ENGINEERED • MANUFACTURED • INSTALLED  
Representatives in Principal Cities • Canadian Licensed Manufacturer: J. A. McKechnie, Ltd., Toronto  
Circle No. 20 on Reader Service Card for more information

## ASSOCIATIONS

*Continued*

tween the two organizations for the furtherance of their common objectives.

● "The Increasing Importance of Modern Materials Handling Equipment and Automation in Industry" is the subject scheduled for discussion by the Detroit Chapter of A.M.H.S. on March 24. Talk will be delivered by R. C. Sollenberger, executive vice president, Conveyor Equipment Manufacturers Association. This will be a joint meeting with A.S.M.E. members.

● The Cleveland Chapter of A.M.H.S. will have a round-table discussion at their March 25 meeting. Topic for discussion is "Packaging, Warehousing, Shipping". Carl Sprague of the Chase Bag Company will serve as moderator.

● Industry exhibits will occupy 56,000 square feet of floor space in Shrine Exposition Hall, Los Angeles, April 1-3. Sponsor of the event is the Electrical Maintenance Engineers Association of Southern California. Sixty schools from Southern California, Arizona and Nevada will participate in the show and compete for \$1800 in prizes. Award money will be used to purchase laboratory electrical equipment for the winning school. One of the highlights of the show will be an "Engineers of Tomorrow Day".

● The Philadelphia Chapter of A.M.H.S. has a Spring Workshop Seminar scheduled for March 19.

● Edward Ahrens, Falls Cities Chapter, A.M.H.S., says an election of officers for that chapter will be held on March 25.



**Rugged and  
raring to go...**

## THANKS TO BATTERY POWER!

That in a nutshell describes battery-powered industrial trucks. With a minimum of moving parts and a vast reservoir of smooth-flowing energy, battery trucks are *always* ready . . . *always* raring to go at full capacity all day long. Silent, safe and fume-free, there's *no* power like battery power . . . and there's *no* battery power like *Gould* power.



Specify  
THE GOULD "THIRTY"  
with New Diamond "Z" Grids—  
America's Finest  
Industrial Truck Battery

# GOULD INDUSTRIAL BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries  
Circle No. 60 on Reader Service Card for more information

©1954 Gould-National Batteries, Inc.



## Fourteen-year-old loads heavy duty press!

The battery powering the truck shown above recently celebrated its fourteenth year of top performance for an exclusive EDISON battery user.

The same user also has two EDISONS in their 11th year of service, one in the 13th, two in the 14th and one in the 21st year of service. This long, trouble-free life is a typical example of service that can be obtained from EDISON batteries in industrial-truck work. It illustrates how EDISON's

steel cell construction and fool-proof electrical characteristics give the most dependable battery power at the lowest over-all cost.

Want to know more about the EDISON features which make this

kind of performance possible in industrial-truck operation? Simply ask for a visit from the Edison Field Engineer in your area today. Write Edison Storage Battery Division, Thomas A. Edison, Incorporated, West Orange, New Jersey.

**Most dependable power ...  
lowest over-all cost  
you get both with an EDISON**



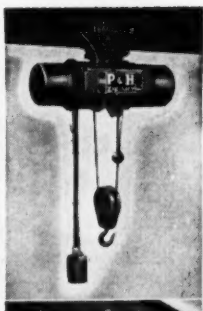
**EDISON**  
Nickel • Iron • Alkaline  
**STORAGE BATTERIES**

EDISON ALSO MAKES THE FAMOUS "V.P." VOICEWRITER AND THE TELEVOICE SYSTEM  
Circle No. 44 on Reader Service Card for more information



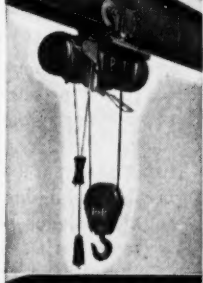
#### P&H Zip-Lift Electric Hoist (Pushbutton control)

Handy little power-house for loads from 250 pounds up to one ton. Versatile — in use in metal shops, dairies, hospitals, bakeries. Solves your load-handling problem within the weight limits specified. Plenty of literature available for more detailed information. Ask for it.



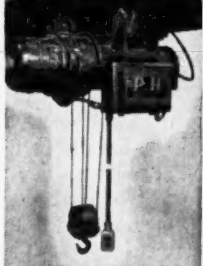
#### P&H Zip-Lift Electric Hoist (Rope Control)

You can do anything with the two rope controlled models that you can with the Pushbutton Zip-Lift. The less expensive rope control gives you a break on price — doesn't cut down the number of jobs you can perform. You get years of trouble-free service at an extremely reasonable initial cash outlay.



#### P&H Hevi-Lift

For heavy loads — and your own particular problem. The Hevi-Lift is a custom-built hoist — manufactured to your specifications. Over 3,000,000 variations possible on this husky load-handler. You're sure to find the right combination for you. Take a look at the literature available — then see your P&H distributor for a concrete solution.



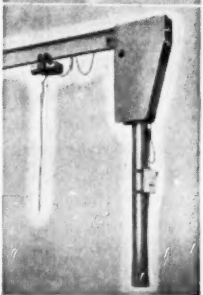
#### P&H Hand Chain Hoists

Perhaps you're in the market for a hand chain hoist; rather than wire-rope. If you are, you'll have to look far to find a better value than these P&H work-horses. Handle up to 25 tons easy as pie. Spur-gear; Timken or roller bearing trolleys; Army-Type trolleys — whatever you need. Ask for literature on the complete line.



#### P&H Jib Cranes

Hang your hoist on a P&H Jib Crane — then you've got a dependable one-two combination working for you. Eight different models — bracket-type, mast-type and pillar-type. Capacities up to 12,000 pounds. Use the coupon for fast return of literature on the complete P&H Line.



**One Week's Work  
...pays for a whole year's  
operation of a dependable  
P&H HOIST**

### Construction Contractor Gets 51 Weeks of "Free" Hoisting

THE Dahlman Construction Company of Milwaukee, Wisconsin, figured it would save a little time if it bought a P&H Hoist to lift stone slabs from the ground to the work area.

It sure did.

It saved so much that by Friday noon of the first week's operation, one year's cost had been saved and the use of the P&H Hoist for the balance of the year was pure velvet!

Now the masonry foreman and one laborer are setting stone slabs that weigh as much as 1,200 pounds, at a rate of 150 square feet per day. Before the P&H Zip-Lift Hoist was put to work, it used to take three or four men *just to lift* one stone slab. And it used to take them about ten minutes to lift the slab and ease it into position.

Today, the two men lift the slab and put it in exact position in only four minutes!

It's easy to see how this time- and labor-saving P&H Hoist can pay for itself so quickly. The experience of the Dahlman Construction Company could be *your* experience. Call your nearest P&H Distributor and ask him to show you how you can convert lifting time into profitable time with a P&H Hoist.

#### P&H Hoists

##### HARNISCHFEGER CORPORATION

4643 West National Ave., Milwaukee 46, Wisconsin

Gentlemen: Send me the complete, detailed story on how Dahlman Construction Company paid for a P&H Hoist in one week. I'm also interested in P&H Zip-Lift, Pushbutton Control ☐ P&H Zip-Lift, Rope Control ☐ P&H Hevi-Lift ☐ P&H Hand Chain Hoists ☐ P&H Jib Cranes ☐.

Name.....Title.....

Company.....

Address.....

City.....Zone.....State.....

2895

**Tear out and mail today**

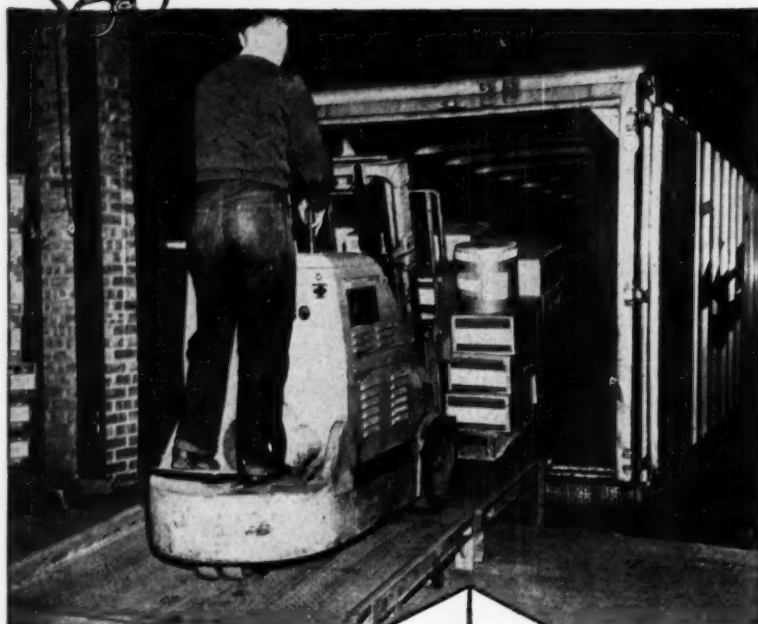
**P&H HOISTS**

**HARNISCHFEGER  
CORPORATION**

4643 W. National Ave. • Milwaukee 46, Wis.

Circle No. 63 on Reader Service Card for more information

LOOKING INTO THE FACTS  
... LEADS INEVITABLY TO MAGCOA



## THIS MAGCOA RAMP-DOCKBOARD IS 5 YEARS OLD —and still going strong!

When this company bought this Magcoa Magnesium Dockboard back in 1948, it made an investment in safe, light-weight, heavy-duty, permanent equipment. The first cost was the only cost.

How about you? Are you still risking workers, lift trucks and loads on a dangerous, makeshift bridgeplate? Replacing one beat-up, worn-out piece of plate with another one that really isn't any better? Why keep on paying and paying for heavy-metal plate never intended for that use, even by the companies that sell it? As a matter of fact, many of them were among the first to switch to safe, long-lasting Magcoa Dockboards—the line with more in-use service than all competitive equipment combined.

But why wait? Get the facts . . . contained in the free new Magcoa Dockboard Facts File. And be sure to look into the new Magcoa Portable Yard Ramp: a rugged, high-speed loading dock . . . where and when you want it. Use the handy coupon.

### MAGNESIUM COMPANY OF AMERICA MATERIALS HANDLING DIV., EAST CHICAGO 1, IND. — Representatives in Principal Cities

#### DIVISION OFFICES:

NEW YORK 20,  
30 Rockefeller Plaza  
PHILADELPHIA 18,  
8001 Southampton Ave.  
WASHINGTON 5, D. C.  
Walker Bldg.  
HOUSTON 17,  
7657 Moline St.  
EL SEGUNDO (Los  
Angeles), Calif.  
1017 Eel Segundo Blvd.

Please send: ☐ Dockboard Facts File ☐ Portable Yard Ramp Literature

Name & Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City-Zone-State \_\_\_\_\_

## HIGHLIGHTS of the month's NEWS

**A**LTHOUGH we are already well into 1954, many forecasters continue to predict either continued prosperity, a recession, or even depression for the months ahead. However, the majority of experts apparently foresee economic and industrial uncertainty for the balance of the year.

Here is what Sheldon K. Towson, president of The Elwell-Parker Electric Co., has to say: "The country is growing and the population is growing. More and more goods will have to be handled, and some mechanical means will have to be used to do the job as economically as possible.

"We can't go back to manual methods with their inherent increased costs, wasted time, and tremendous physical effort. We have to expand our material handling equipment population just about as fast as our human population. If general business should slump slightly, there is no doubt that material handling equipment is one of the best means of reducing costs. And the tougher business gets, the more valuable such equipment will become.

"The man who buys an industrial truck this year is going to have to be a smart buyer. He is going to want the best truck possible for the money he has to spend. And it is going to be the job of every industrial truck manufacturer to strive to make the best product possible at the most economical price.

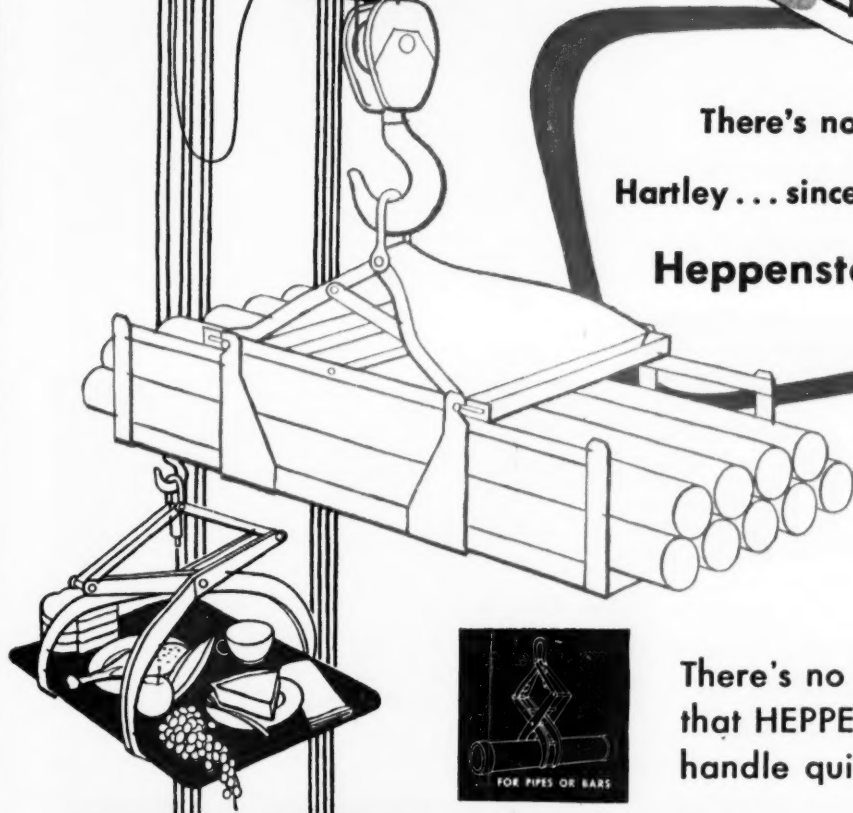
"In the final analysis, I sincerely believe that the material handling industry is in a position to offer positive help in lowering costs within industry in general in the highly-competitive months ahead. This contribution will increase in importance as business becomes tougher and tougher.

We can only add our wholehearted agreement.

Circle No. 83 on Reader Service Card for more information



There's no stopping  
Hartley... since he discovered  
**Heppenstall Tongs**



There's no limit to the range of jobs  
that **HEPPENSTALL SAFE-T-TONGS**  
handle quickly, safely, economically

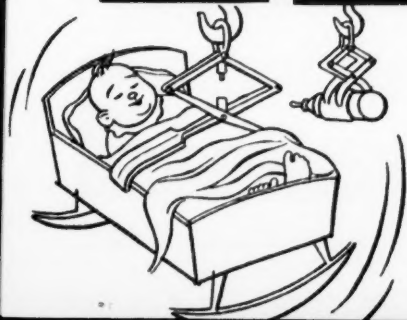
Whatever your handling job requires—regardless of shapes, weights, or sizes—a Heppenstall Safe-T-Tong engineered specifically to your needs will help you speed materials handling operations with greater efficiency and safety. Call Heppenstall now. Obtain complete information and technical assistance. Heppenstall Company, Pittsburgh 1, Pa. Sales offices in principal cities.



**Heppenstall**

... TONGS FOR EVERY LIFTING PROBLEM

Circle No. 65 on Reader Service Card for more information





# Here's what makes the tractor shovel an outstanding performer on big-capacity material handling —

Users everywhere are finding the Allis-Chalmers HD-5G Tractor Shovel an excellent way to reduce production costs — not only because of its big handling capacity and economy, but because of its unusual versatility as well.



With Standard 1-yd. Bucket it is ready for any bulk material — loads trucks, feeds hoppers and conveyors, builds stockpiles.



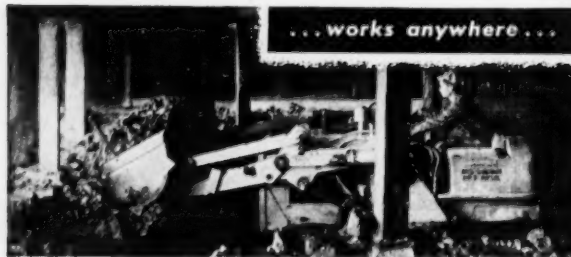
With Lift Fork attachment it skids, stacks or loads packaged or palletized loads up to 4,000 lb., steel beams, pipe, lumber.



With big 2-yd. Light-Materials Bucket it doubles output in coal, coke, other light materials.



Where desired, the HD-5G can be adapted to other special requirements through use of Narrow Bucket, Rock Fork, Crane Hook — any of 13 attachments in all. These can be interchanged in about 20 minutes by simply removing and replacing four pins.



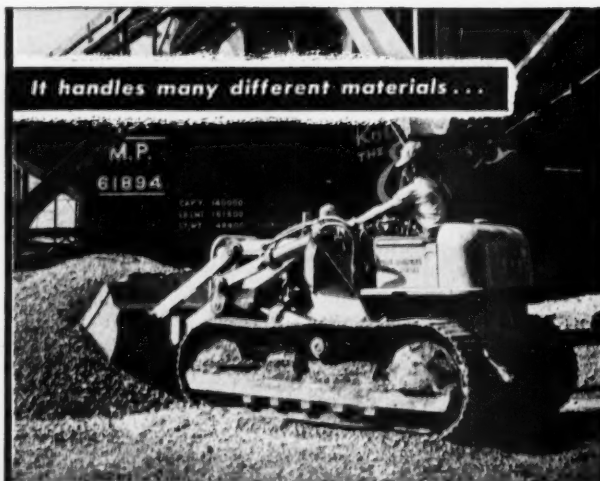
... works anywhere ...

The thousands of HD-5G's can be found working indoors and out — in pits and mines, on stockpiles, around all types of plants. Their crawler treads provide traction for soft spots or steep climbs, smooth out travel over rough ground, fit them to work anywhere. Because of compactness and maneuverability, HD-5G's handle well in close quarters. With an over-all height of about 6 ft. (bucket down), they are used on many underground and other low-headroom jobs.



— also does other work

The HD-5G isn't limited to handling materials. It clears or levels land for new construction, digs basements and trenches, backfills, builds and maintains roads, stockpiles and reclaims coal, saves money and man-hours on dozens of jobs the year around.



It handles many different materials ...



... in any weather

In winter, the HD-5G clears snow from yards, roads and parking lots — in addition to regular duties. With 40 brake hp., 16,200 lb. of weight and plenty of track on the ground, it isn't stopped by snow, ice or mud. Cabs protect operators from cold or sun.

**Ask for a demonstration** — Your nearby Allis-Chalmers industrial tractor dealer will be glad to show you just what the HD-5G or one of the larger 2-, 3- or 4-yd. Tractor Shovels will do — right on your own job. Or write for additional information.

**ALLIS-CHALMERS**  
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Circle No. 172 on Reader Service Card for more information



**Each Truck Does  
2 to 3 TIMES  
MORE WORK!**



Driver calls in for next job. Instant contact keeps men and machines working. There's no waiting for instructions with Motorola 2-way Radio on the job!

*The trend is to MORE  
MOTOROLA 2-way RADIO  
for low-cost  
material handling!*

## **Motorola 2-way Radio**

**enables chemical company\* to reduce waste motion and waiting time—assures on-the-spot action when time is money!**

Motorola 2-way Radio more than doubled material handling efficiency for a well known chemical company. Fork lifts and trucks—no longer tied up waiting for orders—do two to three times more work. Drivers get instructions without leaving their cabs—actually start after loads while still being briefed.

You, too, can cut costs and speed operations with Motorola 2-way Radio. Eight exclusive features guarantee precision selectivity . . . time-tested durability . . . obsolescence-proof design. Let a Motorola engineer in your vicinity give you the complete Motorola 2-way Radio story.

*For details write Dept. 2286-F today!*

\*Name in our files.



**Motorola Communications & Electronics, Inc.**

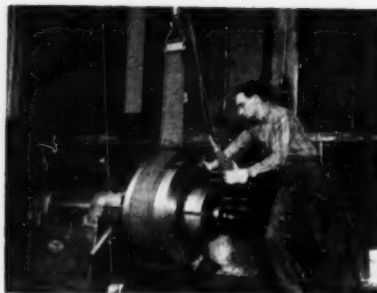
A SUBSIDIARY OF MOTOROLA, INC.

900 N. Kilbourn Ave., Chicago 51, Illinois • Rogers Majestic Electronics Ltd., Toronto, Canada

**WHEN ANSWERING THIS ADVERTISEMENT, PLEASE MENTION "ITEM 5370"**

Circle No. 99 on Reader Service Card for more information

*Only*  
**GRIPPER  
SLINGS**  
are Woven Wire



and here's what that means to you!

**STRENGTH**—spiraed loop construction eliminates flexure of individual wires to assure longer life and less metal fatigue.

**SAFETY**—there's no danger of a sudden break in sling body, specially heat treated handles give extra strength at the hook.

**VERSATILITY**—use any sling in basket or choke hitch. Broad flat sling body grips load firmly, bends completely around even small radius loads when rigged in choke hitch. No kinking, tangling, snarling. Stores in compact roll or hangs against a wall when not in use.

**For full information . . .**

see your mill supply, materials handling or safety equipment distributor. Or write direct for your copy of illustrated catalog.



**The Cambridge  
Wire Cloth Co.**

Dept. W • Cambridge 3, Md.

WIRE CLOTH	METAL CONVEYOR BELTS	SPECIAL METAL FABRICATIONS
---------------	----------------------------	----------------------------------

OFFICES IN PRINCIPAL INDUSTRIAL AREAS

DISTRIBUTORS—write for open territory data!

Circle No. 23 on Reader Service Card

34

**MEN**  
in the news

. . . at Mathews Conveyor Co.

The appointment of **L. J. Johnson** to the position of general sales manager has been announced by company officials. Johnson has managed the Mathews field engineering office in New York City for several years and recently returned to the home office at Ellwood City, Pa., assuming the position of assistant sales manager until his recent appointment.



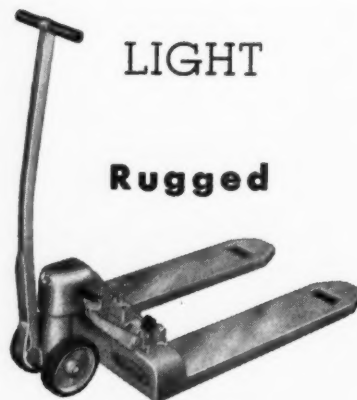
**L. J. Johnson**

. . . at Lewis-Shepard Products Co.

**Howard M. Palmer** has been appointed sales vice president, according to **A. L. Lewis**, president. Palmer has been general sales manager for the past three years, and prior to that was Power Division sales manager. He has been with the firm since 1945.

. . . at American Brake Shoe Co.

First vice president **Kemp-ton Dunn**, has been named company president in recent elections. **Maurice N. Tainer**, president since 1950, has reached retirement age and was appointed to a newly created post of vice chairman. The appointments were made known by **William B. Given Jr.**, chairman of the board. Dunn has been with the company since 1932 and since 1942 has held posts as treasurer, secretary and vice



**LIGHT**

**Rugged**

**Easy to Maneuver**

**RAYMOND**

Lightweight

**HAND PALLET TRUCK**

Look for long service when you choose a Raymond Lightweight Lift Truck to handle your pallet loads. Because this 2,000 lb. capacity truck is the sturdiest lift truck ever made!

Its one-piece welded forks are  $\frac{1}{3}$  times stronger than bolted forks. The pump piston is heavily chrome-plated to prevent leakage and prolong the life of the pump. Ram pistons, axles and lever shafts are made of heat-treated alloy steel for extra strength.

The Raymond Lift Truck is highly maneuverable too due to its light weight and 270° steering arc. It is foot-pedal operated, offers effortless pallet entry because of staggered booster rolls, has rugged, reinforced handle and dual-purpose brake.

**WRITE FOR CATALOG** Get the facts before buying your next hand pallet truck. Write for new Raymond Hydraulic Elevating Equipment catalog today!

**RAYMOND**

ELECTRIC INDUSTRIAL TRUCKS  
HYDRAULIC ELEVATING EQUIPMENT

**The RAYMOND CORPORATION**

3327 Madison St., Greene, N.Y.

Please send new Raymond Hydraulic Elevating Equipment Catalog.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

Circle No. 166 on Reader Service Card

**FLOW • MARCH, 1954**

president. Trainer joined the firm in 1916 and advanced through the sales department until he became president and director.

... at Oxy-Catalyst, Inc.

Nicholas F. Pensiero, formerly a key Air Force supply officer and RCA Victor executive, has been named head of the new products and market research division. In his new post he



N. F. Pensiero will supervise the development of oxidizing catalysts for control of air pollution and for the salvage of heat from waste products. The company is headed by the famed catalytic scientist, Eugene J. Houdry.

... at Electric Storage Battery Co.

John W. Kelly has been named manager of the company's branch office in Boston. He formerly was a sales engineer in the Atlanta office, since 1946. In his new post he will be responsible for sales and service of Exide industrial batteries throughout New England.

... at Minnesota Mining & Mfg. Co.

The appointment of Harold F. Larson as general office manager was announced recently. In his new post Larson is responsible for all office management functions of the parent company and its domestic subsidiaries. He has been with the company since 1925 in various administrative capacities.

... at Allis-Chalmers Mfg. Co.

The appointment of Robert L. Carlstein as assistant production control manager of the company's West Allis Works,

# 6-FT. AISLES

Now you can have them...

without obsoleting  
your present racks  
or pallets

Only the

**RAYMOND**

**Reach-Fork\***  
TRADE MARK  
makes it possible!



**IT'S TRUE!** The Raymond Reach-Fork is the only tiering truck that operates in 6-ft. aisles with existing warehouse equipment.

**NO SPECIAL PALLET**s or racks are required by the Reach-Fork for close-quarter operation. It operates from the aisle—does not straddle the bottom pallet. Its forks reach right into the rack to pick up or deposit load, extending 24" and back in seconds.

**THE RAYMOND REACH-FORK** can increase your storage capacity as much as 50%. Its light weight permits use on low-capacity elevators and floors. Ideal for loading truck trailers, boxcars because it stacks pallets closely—can be elevated 41" without increasing overall height. Reach-Fork is equipped with new Raymond power unit that opens like a book for fast, easy servicing. All parts housed behind hinged double doors—nothing under unit to inspect but the wheels. \* PATENT NO. 2,564,002

**RAYMOND REACH-FORK**  
Electric Tiering Truck.

Model E2RT Capacity: 2,000 lbs.

**THE TRUCK WITH THE  
"BOARDING HOUSE REACH"**

**MAIL  
COUPON  
TODAY**

**The RAYMOND CORPORATION**

3326 Madison St., Greene, N.Y.

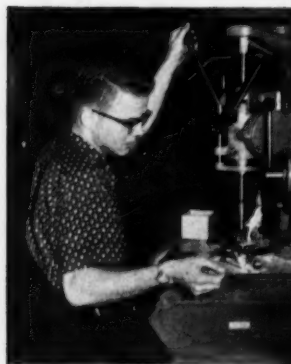
( ) Please send me latest Reach-Fork Bulletin.  
( ) Please have your representative call.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

Circle No. 109 on Reader Service Card for more information

# NESTIER®

## PAYS OFF AGAIN!



Here is the NesTier at work in the Portland plant of the Powder Power Tool Co. Note the ease with which the machine operator can handle small parts.

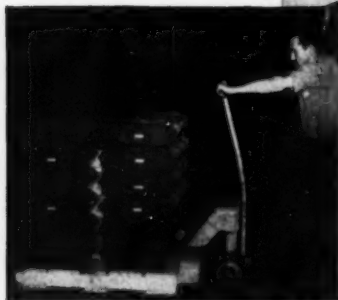
Standard NesTier boxes, originally installed at the Powder Power Tool Corporation, Portland, Oregon, produced immediate savings in production costs—speeded the flow of small parts.

Now, with the addition of NesTier baskets, the necessity of rehandling parts requiring cleaning has been eliminated—as the baskets move these parts through all phases of production. NesTier boxes and baskets, working in combination, have paid off again.

NesTiers nest to save space. Filled, they tier in rigid stacks with contents of each unit visible, easily accessible. NesTiers are easily transported by any type conveyor, on pallets or by hand. Mass produced in three standard sizes, NesTiers are the answer for every small parts handling job—from stockroom to loading dock.



NesTiers tiered on pallets in the stockroom. Contents are instantly identified, readily accessible. Compare these with the pile of boxes at right, soon to be scrapped, where contents are hidden, hard to get at.



On pallets, tiered and filled NesTiers are transported by hand truck. This enables one man to move large unit loads—cuts handling costs way down.

MODEL	WEIGHT	Diagram Dimensions				
		A	B	C	D	E
120 BOX	3 LBS.	12	7 1/4	4 1/4	6 1/2	5 1/4
175 BOX	6 LBS.	18 1/4	9 1/4	6 3/4	11 1/4	7
175 BASKET	4 1/4 LBS.	18 1/4	9 1/4	6 3/4	11 1/4	7
220 BOX	11 LBS.	22 1/2	12 1/2	7 1/4	14 1/4	8 1/2
220 BASKET	7 1/4 LBS.	22 1/2	12 1/2	7 1/4	14 1/4	8 1/2

Write today for a demonstration in your plant.

# NESTIER®

THE CHAS. WM. DOEPKE MFG. CO., Inc.,  
ROSSMOYNE, OHIO

Circle No. 42 on Reader Service Card for more information

## MEN IN THE NEWS

Continued

according to **Ernest W. Bonness**, works manager of the general machinery division. Carstein has been with the firm since 1934 and since 1949 has been superintendent of material control. **William H. Schrinner**, Carlstein's assistant, has been named to fill his vacated post.

... at Clark Equipment Co.

The appointments of **Colin G. Kennedy** as advertising manager and **George M. Barnard** as assistant advertising manager



C. G. Kennedy



G. M. Barnard

of the Construction Machinery Division have been announced by **Clarence E. Killebrew**, vice president. Both Kennedy and Barnard held similar positions with Michigan Power Shovel Co., which was acquired by Clark last May. Kennedy came to the Michigan firm in 1945 after serving six years as manager of the General Electric Co. branch office in Bogota, Colombia. Barnard had served with the Michigan company for several years in various capacities in purchasing, sales promotion and advertising.

... at United States Steel Corp.

**Paul Sullivan** has been appointed director of public relations in the Chicago district according to an announcement made recently by **J. Carlisle MacDonald**, assistant to the chairman of the board in charge of public relations. Sullivan, who held a similar post in the





## OVER A MILLION TONS OF STEEL HANDLED ANNUALLY AT U.S. STEEL'S DUQUESNE WORKS

— *by* **ROSS** *Carriers*

Running the roads and arteries of U. S. Steel's huge Duquesne Works is a team of seven Ross Carriers and two Ross lift trucks—fast, mobile, well suited to handling over a million tons of steel according to precision-engineered plan.

Quickly dispatchable by radio to any point, the Ross Carriers haul their loads of blooms and billets, and handle semi-finished steel between conditioning yards, stockfield areas and finishing mills. The Ross lift trucks work effectively with the Carriers—moving and piling smaller loads, and removing them as needed for rolling orders.

Formerly, steel had to be handled up to seven times by locomotive and crane from primary to secondary mills. Now, steel is at the finishing mills, usually

after only two rides on a Ross—never more than four. The carriers also move ingots, scrap in charging boxes, and maintenance spares. In addition, storage space inaccessible by crane is now put to good use.

Are not these time-saving, money-saving advantages, built into Ross Carriers, waiting discovery in your business? Why not call in the Ross dealer to help find your own substantial benefits. Call him.

**CLARK  
EQUIPMENT**

**ROSS CARRIER LINE**  
Industrial Truck Division  
**CLARK EQUIPMENT COMPANY**  
Benton Harbor 13, Michigan

Circle No. 29 on Reader Service Card for more information

**NEW! MHS**

# Spur Curve

**with SmoothSwitch mechanism**



**Remote or  
manual control  
ENDS JAM-UPS!**

In this smooth-working, fast action spur curve, the rollers themselves pivot to direct the flow of materials in the desired direction! A linkage action, actuated by solenoid, air ram, hydraulic ram, or by hand, moves the rollers—each into its correct position as a true radius of the curve. Material moves without jamming.

The new MHS Spur Curve may be used with roller, wheel, live roller and belt conveyors, handling practically anything. It is available in many widths, with regular and heavy duty rollers, in right and left 45° and 90° spur curves, and in 45° and 90° Y switches.

Write for full information on the new MHS Spur Curve with SmoothSwitch mechanism!

ROLLERVEYORS • WHEELVEYORS • TRANSVEYORS • LIFTVEYORS • JR. MONOVEYORS • LIVE ROLLERS

**Mechanical Handling Systems Inc.**



4620 Nancy Ave., Detroit 12, Michigan

Offices in Principal Cities

In Canada: Canadian Mechanical Handling Systems Ltd., Windsor and Toronto

Circle No. 89 on Reader Service Card for more information

## MEN IN THE NEWS

*Continued*

Utah-Intermountain district, succeeds **Edward C. Logelin**, who became the corporation's vice president in the Chicago district on January 1.

... at Yale & Towne Mfg. Co.

The appointment of **F. Gordon Ricker** as assistant to the general sales manager of the material handling equipment division has been announced by the general sales manager **James H. W. Conklin**. Ricker formerly was branch manager of the Pittsburgh office. He has been succeeded in that post by **Robert B. Coleman**, who had been sales manager for the Cleveland branch.

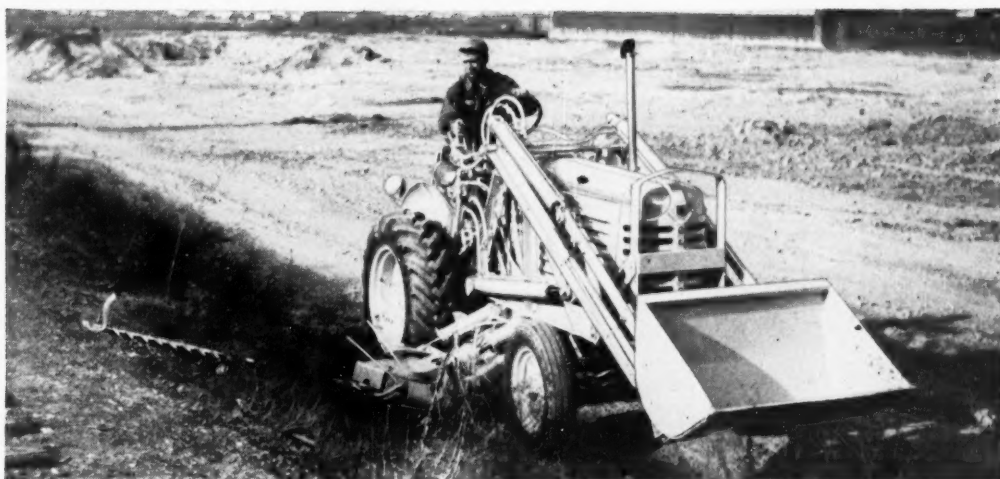
... at American Tractor Co.

**Marc B. Rojzman**, company president, has announced the appointment of **John Tom** as director of engineering. He comes to American Tractor with a wealth of experience in tractor design and engineering. During the early 20s he was chief engineer in the development of agricultural tractors. He has since designed frontend loaders, bulldozers and cranes and for the past eight years has been engaged in consulting engineering work.

... at Hewitt-Robins, Inc.

**Donald E. Kullander**, former personnel manager at the company's Buffalo plant, has been named manager of industrial relations for the corporation. **John J. Sheeran Jr.** replaces him as personnel manager at Buffalo. Kullander formerly was an assistant engineer for Western Electric Co. before joining Hewitt-Robins in 1948. Sheeran had been assistant director of industrial relations for Johnson & Johnson and prior to that had been associated with the American Can Co. and Calco Chemical Co.

*(Continued on page 148)*



## This Mower-Loader Team



## cuts cost to the bone!

With an Oliver Industrial wheel tractor and mower-loader attachment, you have a year-round team that cuts time and dollars from hundreds of jobs. The mower is an all-hydraulic unit that slices matted grass to heavy brush clean and quick. It mows side-hills or down-slopes...cuts high or close, and clears obstacles without delay. Hydraulic safety release and breakaway action protect the cutter

bar from damage.

When you need the loader, change controls...no attachments or alterations to make. Both units work independently. The bucket is carried low for perfect visibility in mowing operations. The cutter bar stores vertically or detaches conveniently for loading work. And for real versatility, these attachments add quickly to the loader—backfiller and bulldozer blade, coal

and snow bucket, snow plow, lifting boom and fork.

If you're interested in low maintenance and cost-cutting, all-season performance with just *one unit*—see your Oliver Industrial Distributor for a demonstration of the mower-loader combination on either the Oliver "66" with  $\frac{1}{2}$ -yard loader or the "77" with  $\frac{3}{8}$ -yard loader.

## THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel

Circle No. 106 on Reader Service Card for more information



and crawler tractors

# Ham on Rye or Rye on Hand?



Arranged compactly on stands in tiers, the Vary-Tally can be supplied in any of 66 combinations, up to 6 banks high and 12 units wide, with a minimum of 2 units wide. Write for news sheet and prices.

- Traffic Engineers
- Schools and Colleges
- Nurserymen and Florists
- State Park and Forest Services
- Laboratories
- Milk Plants and Ice Cream Processors
- Researchers
- Industrial Plants
- Textile Mills
- Inspection and Quality Control
- Jobbers, Wholesalers, Distributors

- Restaurants and Hotels
- Mail and Phone Order Departments
- Laundries and Linen Supply Houses
- Manufacturers of equipment for:
  - Order Control
  - Stock Control
  - Inventory Control
  - Traffic Control
  - Sales and Market Analysis
  - Laboratory Analysis
  - Payroll Preparation
- and What Do You Want to Count?

*The Name that Counts*



**VEEDER-ROOT INC.**

HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C. • Montreal 2, Canada • Dundee, Scotland • Offices and Agents in Principal Cities  
Circle No. 141 on Reader Service Card for more information





## *One-ton dust pan*

"PAYLOADER" tractor-shovels pay dividends empty eleven ways handling bulk, loose materials in all kinds of industries. One of the most interesting is at this foundry and machine shop. The "PAYLOADER" positions its bucket under the hopper of the dust collector, the gate is opened and a ton or more of dust flows quickly into the bucket through a canvas boot—a clean, dust-free operation.

Scooping, shoveling, digging, carrying, spreading and all sorts of lifting, loading, unloading and hauling jobs both indoors and outdoors are "PAYLOADER" duties in thousands of plants. Multiple speeds in both directions, short-turning ability and easy-handling enable them to work fast in close, awkward places.

It will pay you to find out how modern "PAYLOADERS" can improve your output and simplify your material-handling problems. The Frank G. Hough Co., 731 Sunnyside Ave., Libertyville, Illinois.



Bentonite and other bagged materials are quickly carried from boxcar and stacked. Hydraulic power gives precise bucket control.

JOB STUDIES are available, illustrating and describing operations in several different plants. These helpful, authorized studies can be secured on request, without obligation.



YOU CAN'T COMPETE IF YOUR EQUIPMENT IS OBSOLETE

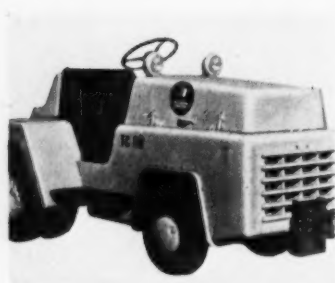


Circle No. 69 on Reader Service Card for more information



## in Equipment

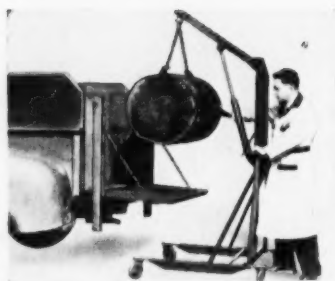
Summaries of latest information from manufacturers. For more details, use the free-mailing Reader Service Card.



### Towing Tractor

This 1954 model of the TC-60 "PAYLOADER" towing tractor is made by the Frank G. Hough Company. It has a drawbar pull of 6000 lbs. Greater clearance has been provided between the rear dual-drive wheels and counterweighted fenders, to permit use of heavy-duty tire chains. The dual-range, full-reversing transmission now has solenoid vacuum-actuated tail-shaft brake, which is said to enable gears to mesh quickly and quietly. Double-action torque-converter drive has been continued.

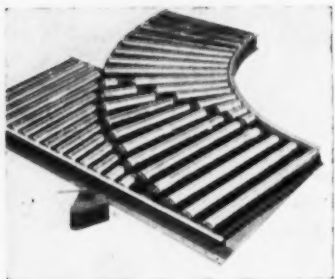
Circle No. 180 on Reader Service Card for more information



### Portable Floor Crane

News of a one-half ton portable crane recently added to its line has just been released by the Stratton Equipment Company. The unit is hydraulically operated, and has a safety release valve to automatically stop overloading. Four 5 in. casters have been mounted on the frame, for ease in maneuvering. Total weight of the crane is 186 lbs. Highest beam position is 92 in., lowest 45 in., and beam travel is 47 in.

Circle No. 181 on Reader Service Card for more information



### Spur Curve for Two-Direction Flow

Mechanical Handling Systems has developed a spur curve which permits two-directional control of equipment. Curve may be manually or remotely operated, and actuating mechanism may be solenoid, air or hydraulic ram, or manual. Various widths and weights of rollers are available, from 1 1/4 in. to 2-9/16 in. diameter, and from 18 to 7 gauge. May be used with roller, wheel and belt conveyor. Model shown is manually operated.

Circle No. 182 on Reader Service Card for more information



### Specially Designed Crane Carrier

The Schield BANTAM Company has announced the addition of a specially designed Crane Carrier to its line. Termed Model T-35, features are a 12 in. I-beam frame, and 26,000 lb. rated rear axles and large tires. Other specifications are: 148 in. wheelbase; 4-wheel drive, 10 wheels with 8:25 x 20 tires; 113 h.p. engine at 3200 r.p.m.; and a 5-speed transmission with dual range, giving up to 10 speeds forward and 2 reverse.

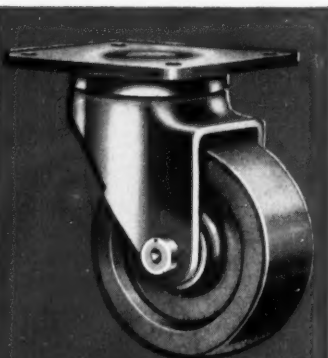
Circle No. 183 on Reader Service Card for more information

# LESS PUSH MORE GLIDE

with

EASY-ROLLING

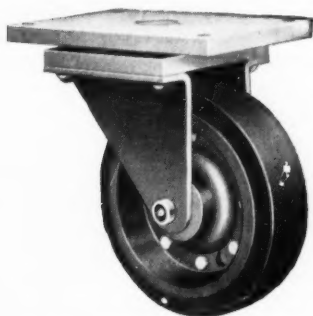
# Colson CASTERS



Model 3-427-45 for medium weight industrial equipment capacity, 300 lbs. per caster



Model 5-807-15 especially designed for heavy-duty industrial work—capacity 800 lbs. per caster



Model 6-807-65 for extra heavy service. Made of heavy-duty steel—practically indestructible

• Now's the time to transform those balky old hand trucks into efficiently operating vehicles—quickly and inexpensively—by replacing worn out, obsolete casters with new COLSONs. There are over 1500 models from which to choose. COLSON also manufactures such cost-cutting handling equipment as Box Trucks, Drum Trucks, Platform Trucks, Hand Trucks, and Lift-Jack Systems—something for every materials-handling need.

*Write us today or call the nearest COLSON office for the solution to your handling problems. (COLSON offices are listed in the yellow pages of your 'phone book under "Casters" or "Trucks, Industrial").*

## MAIL THIS COUPON TODAY



Please send my free copy of the new COLSON Catalog.

NAME .....

POSITION .....

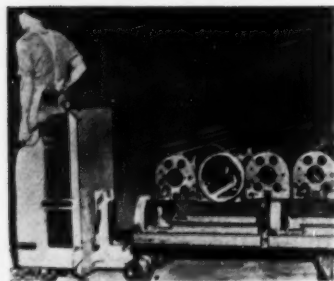
COMPANY .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

**THE COLSON CORPORATION**

ELYRIA, OHIO  
HAND TRUCKS • LIFT-JACK SYSTEMS • INDUSTRIAL TRUCKS



## Semi-Live Skid Electric Truck

A new rider type truck for handling semi-live skids has been added to the line of equipment manufactured by the Raymond Corporation. This battery powered truck was designed for the rapid transport of semi-live skids in congested areas and narrow hand truck aisles. A toggle lever, mounted on the front of the tractor unit, engages the dead end of the skid and raises the legs off the floor for easy movement. Loads up to 4000 lbs. may be handled. Top speed is 5 m.p.h.

Circle No. 184 on Reader Service Card for more information



## Adjustable Loading Ramp

A new RITE-HITE Adjustable Loading Ramp, designed to recess flush with dock level, has been announced by Loomis Machine Company. The unit, Model 72-F, is manually operated, and provides a bridge between truck and dock. No control handles or side skirts project above dock level, and it thus locks in place and becomes part of the dock surface when not in use. Capacity of unit is 10 tons.

Circle No. 185 on Reader Service Card for more information



## Demountable Casters for Cargo Handling

The upsurge in air freight handling is said by Aerol Company to be responsible for new developments along that line. Demountable caster has been developed where the caster units are locked on grooved mounting plates on trucks. When load is spotted on plane, casters are quickly removed and skid load weight is evenly distributed. Another set of casters is locked in place at plane's destination, and load is removed intact to freight warehouse.

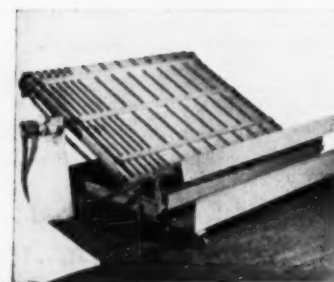
Circle No. 186 on Reader Service Card for more information



## Trackmobile for Spotting or Switching

A Trackmobile with 7350 lbs. of draw-bar pull is being used by many different types of industries, according to the manufacturer, Whiting Corporation. Truck is used to spot or switch railroad cars, but is versatile in that it can travel on either its rubber-tired road wheels or its steel rail wheels. Weight of machine is 6000 lbs. Unit pictured has recently been ordered for use by U. S. Navy Dept.

Circle No. 187 on Reader Service Card for more information



## Automatic Scrap Eliminator

A single operator can automatically discard trim cuts with this Fried Scrap Eliminator. Manufactured by Fried Steel Equipment Manufacturing Co., the unit is designed for use with the Fried Stripveyor or Liftveyor. Operator, before taking trim cuts, pushes hand lever into down position. This keeps tilt table deflected, causing rejects to be diverted into scrap box. By moving lever into up position, tilt table returns to original position and shearings fall on Stripveyor or Liftveyor.

Circle No. 188 on Reader Service Card for more information

*(Continued on page 156)*

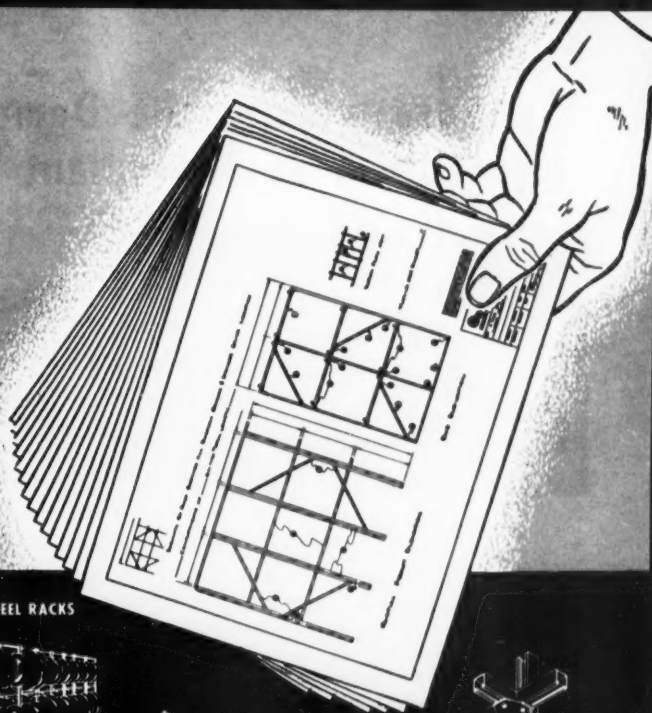


**NOW! 15 BASIC**

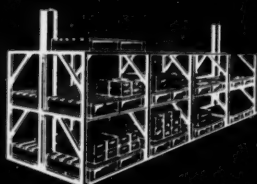
**UNISTRUT®**

**RACK DESIGNS TO MEET  
ALL STORAGE NEEDS**

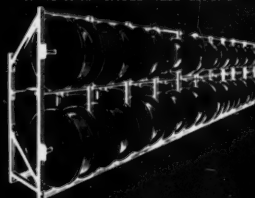
**Easy-to-adapt standardized designs will  
save time, money—do the job better!**



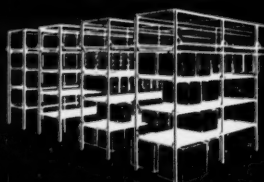
**PALLET AND SKID RACKS**



**WIRE AND CABLE REEL RACKS**



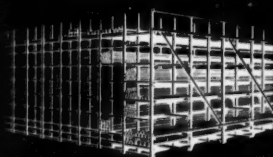
**GENERAL STORAGE RACKS**



**DIE RACKS**

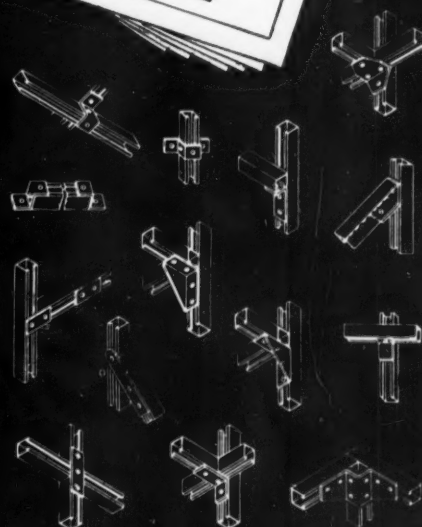


**BAR STOCK RACKS**



**BASIC COMPONENTS  
OF THE UNISTRUT  
METAL FRAMING  
SYSTEM**

**No Drilling,  
No Welding,  
100% Adjustable  
and Re-usable**



**Typical Connections made from  
a Few Standard Fittings**

Users of UNISTRUT framing well know its versatility—how easily it is assembled, without special tools or skilled help, without drilling or welding. They know its great load bearing capacity, that it is adjustable and re-usable, that it presents a neat and orderly appearance. They know, too, of its long range economy, its labor saving, time cutting features.

Now UNISTRUT offers new advantages in the form of design standardization for racks of all types, permitting easy adaptation of a variety of proved, field-tested designs to your own special needs. If you have a rack problem you will want to see how these designs can save you engineering detailing and erection time, cut your costs, do the job better! Phone or write your nearest UNISTRUT distributor or dealer—he will gladly help you without obligation.

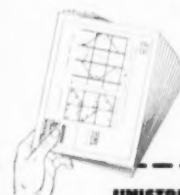


**Distributors and Warehouse Stocks in Principal Cities.  
Consult your Telephone Directories.**

U. S. Patent Numbers: 2327587, 2329815, 2345650, 2363382, 2380379, 2405631, 2541908, Other Patents Pending

**The World's Most Flexible  
All-Purpose Metal Framing**

**FREE! 15 Standardized Rack Designs.** Light and heavy duty, multiple tier, single and double entry pallet, bar stock, reel and storage racks—contact your nearest UNISTRUT representative, or mail coupon below.



**UNISTRUT PRODUCTS COMPANY**

1013 W. Washington Blvd., Chicago 7, Ill. Dept. A3.  
Please send me the Standardized Rack Designs,  
without obligation.

Name

Company

Address

City  Zone  State

Circle No. 139 on Reader Service Card

# Suppose we put the Dempster-Dumpster System right down in your plant . . . then what?



- *Well First—let's make it clear that we are furnishing you with several sizes of different designs of 26 containers to suit your materials requirements. Then bear in mind that we are delivering you only one truck-mounted Dempster-Dumpster and with your driver this one outfit picks-up, hauls and dumps all containers, about like the one shown above.*

Now, how many conventional trucks are you using for handling rubbish, scrap, raw materials, and what have you?

For several years now, one plant has been doing considerably more work with two Dempster-Dumpsters and two men than they did with five trucks and fifteen men before the Dempster-Dumpster System was installed. You can guess at the approximate savings annually.

A glance at the picture below and you get the whole story of the Dempster-Dumpster System. Never before have you been able to cut bulk materials

handling costs so drastically.

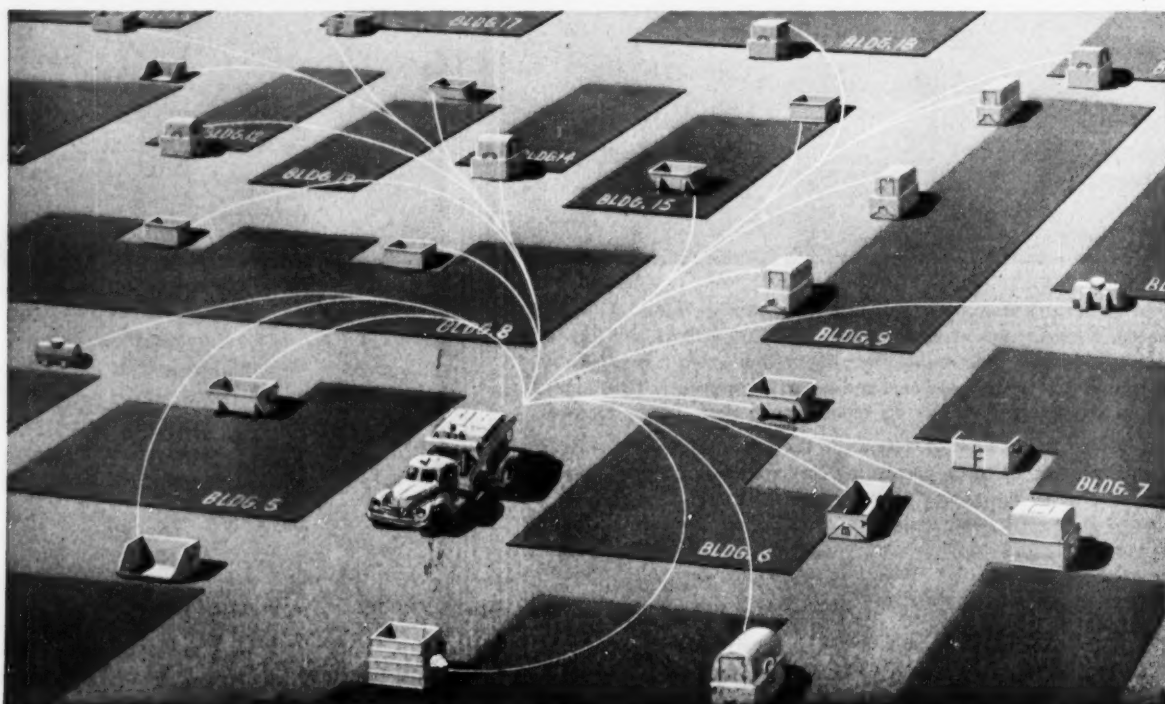
One truck mounted Dempster-Dumpster handles the entire group of 26 Dempster-Dumpster containers. These big, detachable steel containers are like having 26 truck bodies for a single truck.

Any required number of Dempster-Dumpster containers are spotted at convenient materials accumulation points inside and outside your buildings. They range in sizes up to 12 cu. yds.—3 to 4 times the capacity of a regular dump truck. Materials—bulky, light, heavy, solids, rubbish and even liquids—are dumped or placed into these containers.

The truck mounted Dempster-Dumpster makes scheduled rounds, picks up each preloaded container, carries it to the point of disposal, sets it down intact or dumps the materials and returns the container for refilling. The entire operation is hydraulically controlled and handled by your truck driver.

It's as simple as we have described it. The amazing thing is the tremendous savings being made by the Dempster-Dumpster System in hundreds of leading industrial plants over the nation.

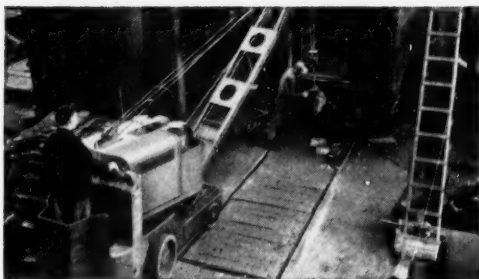
A product of Dempster Brothers, Inc.



**DEMPSTER BROTHERS, 634 Shea Bldg., Knoxville 17, Tenn.**

# B.F. Goodrich

## FREE TIRE AND WHEEL ANALYSIS can lower over-all tire costs as much as 50%



**Cutting and chipping?** Uneven or littered hauling surfaces soon ruin tires. BFG's TW Analysis shows you how to get maximum tire life.

**Hauling surfaces,** heat, inside or outside hauling, weight of loads—all must be considered in order to select the right tire. Let the BFG man solve these problems for you.



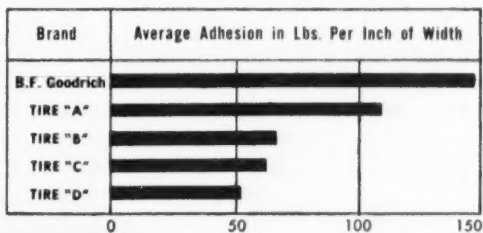
Savings of as much as 50% on industrial tire costs have been reported by users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Tire maintenance costs have been reduced 20% and more! This free analysis plan can save *you* money, too. Merely contact your local BFG retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations. He will tell you what type and size tires, what tread design and compound will serve you best.

The advice and counsel you get will be unbiased, for B. F. Goodrich makes a *complete* line of industrial tires. A special TW Analysis is available for manufacturers of industrial hauling equipment.



**AVOID TIRE FAILURES LIKE THIS.** Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities built into BFG solid industrial tires.

### Tests Prove B. F. Goodrich Adhesion Best



The B. F. Goodrich Company  
Tire & Equipment Division  
Department TW-369  
Akron 18, Ohio

**Specify B.F. Goodrich tires when ordering new equipment**

Please send me:

- ☐ Additional information on your Tire and Wheel Analysis Plan
- ☐ Free copy of "Industrial Tire Guidebook"
- ☐ Free copy of "How to Get Extra Service out of Solid Industrial Tires"

Name \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Circle No. 57 on Reader Service Card for more information



# LITERATURE

FEATURED IN THIS MONTH'S ADVERTISEMENTS

**Engineered Applications:** American MonoRail Company offers "Engineered Applications File F-1" which contains a series of case studies taken from successful American MonoRail installations.

Circle 5 on Reader Service Card

**14-Year-Old Batteries.** Edison Storage Battery Division, Thomas A. Edison, Inc., tells how one of its batteries has been in continuous use for 14 years. Information on this long, trouble-free life is available.

Circle 44 on Reader Service Card

**Packaging Costs Cut:** Bulletin C-201 from International Staple & Machine Company tells how nine different companies with nine different problems found a common solution to cut packaging costs with International staplers.

Circle 164 on Reader Service Card

**More Work from Trucks:** Motorola, Inc., offers to show how its 2-way radio more than doubled material handling efficiency for a chemical company. Fork trucks did two to three times more work after radios were installed.

Circle 99 on Reader Service Card

**New Caster:** Complete information on the Midwest PressCoin Caster is available from Midwest Precision Corporation. This new caster is said to be inexpensive, rolls and swivels easily and is reportedly the strongest caster of its type for medium-light duty.

Circle 165 on Reader Service Card

**Streamlined Handling:** Streamlined handling is how

Advance Metal Products Corp. describes its stacking boxes and nesting pans. Literature points out they are particularly rigid when stacked because inside supporting rails extend around all four sides.

Circle 163 on Reader Service Card

**Lightweight Pallet Truck:** A hydraulic elevating equipment catalog from The Raymond Corporation describes the Raymond lightweight hand pallet truck which can handle loads up to 2000 pounds.

Circle 166 on Reader Service Card

**Process Belts:** Catalog 52F from Ashworth Bros., Inc., tells about the company's process belts which are engineered for the specific end use and are designed to keep your product on the move, provide long life and low maintenance.

Circle 9 on Reader Service Card

**"All-Weather" Fork Truck:** Said to be a "king" when it comes to moving more tonnage per day in any weather. Hyster Company's new RC-150 fork truck is described in Booklet No. 1287.

Circle 70 on Reader Service Card

**New Floors Over Old:** You can roll a new floor over the old with Redi-Roll, a factory-prepared, heavy duty plastic resurfacer which lets traffic roll over it immediately. Details are available from Rock-Tred Corporation.

Circle 115 on Reader Service Card

**4-Side Case Marking:** Descriptive literature from Adolph Gottscho, Inc., tells how you can mark all 4 sides of cases automatically in a

single pass with the company's new Rolacoder unit attached to conveyor or sealer.

Circle 59 on Reader Service Card

**For Better Packages:** Black Products Company offers literature telling how you can get a better package with the Black Diamond valve bag packer and settler.

Circle 24 on Reader Service Card

**Increased Dock Efficiency:** You can increase the efficiency on your loading dock with the Rollway portable steel dock plate, according to the manufacturer, Woodford Hydrant Company. The dock plate is equipped with specially-designed handles and wheels for portability.

Circle 145 on Reader Service Card

**Lift that Lowers Costs:** Service Caster & Truck Corp. claims its Service Electraulic Lifter, which moves loads between levels, is a lift that lowers costs. Detailed information is available in Bulletin 51.

Circle 130 on Reader Service Card

**Conveyor Field Reports:** A catalog from The Rapids-Standard Company, Inc., tells about the profit stories contained in Rapistan field reports. These reports are available for a number of specific industries.

Circle 108 on Reader Service Card

**Storage, Shipping Costs Halved:** Brainard Steel Division tells how Brainard strapping service cut storage and shipping costs 50 per cent for one manufacturer. An analysis of your handling and shipping operations is available.

Circle 17 on Reader Service Card



**This dotted line proves YALE again leads the way†**

**Yale's new**

**Safety  
Silhouette  
ELECTRIC  
Truck**

**with safety features  
you've never seen before  
on any fork lift truck!**

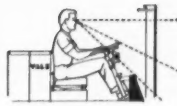
† To those who know fork lift trucks, just one glance at the dotted line shows why there's no safer truck than the new Yale *Safety Silhouette*.

Now, even when your operator sits erect, his head is lower than the truck's 68-inch overall height. That means he'll never have to crouch or duck when entering narrow or low headroom areas. The truck itself acts as an automatic gauge. Not only is this safer, but the lowered seat also enables operator to work faster and far more efficiently.

You'll want full details on this new Yale Safety Silhouette electric fork truck which offers Yale's usual high standards of rugged, dependable, trouble-free operation...plus greater safety than ever before.



**DRIVER'S SEAT**  
and floor clear on both sides. No levers block operator. Can quickly get out either side.



**LOWER COWL**  
provides improved visibility, removes dangerous blind spots, facilitates operation, increases safety.



**HANDLES HEAVY LOADS**  
with ease and with complete driver protection. Available in 2000 and 3000 lb. capacities at 24 inch load center.

**PLUS** all these other Yale advantages. Narrow 32½ inch truck width easier to operate in confined areas. Centralized "fingertip" controls increase operator efficiency. All standard attachments easily mounted and interchanged. Send for full details.

**YALE\***

**INDUSTRIAL TRUCKS AND HOISTS**

\*Reg. U. S. Pat. Off.



**For Full Details  
On Yale's Safety  
Silhouette  
Electric Truck  
MAIL COUPON NOW!**

**The YALE & TOWNE Manufacturing Co., Dept. 43**  
Roosevelt Boulevard, Philadelphia 15, Penna.

Yes, please send me full details on the  
new Yale Safety Silhouette Electric Truck.

Company \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

In Canada write: The Yale & Towne Manufacturing Co.,  
St. Catharines, Ontario, Canada.

**Gas, Electric, Diesel & LP-Gas Industrial Trucks • Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts**

Circle No. 147 on Reader Service Card for more information

**FLOW • MARCH, 1954**

**49**

## At Kaiser Metal Products



### C&D Batteries for extra work!

Last year, Kaiser Metal Products, Bristol, Pa., one of the country's leading producers of aircraft components, bathtubs, kitchen sinks and cabinets used 50,000 tons of steel in turning out such products. To help handle the enormous quantities of parts and material required, Kaiser uses C & D Slyver-Clad\* batteries to power many of the industrial trucks employed in its daily operation. For Kaiser, like hundreds of other major American companies, has found it pays to power with C & D Slyver-Clad batteries.

C & D Slyver-Clad batteries are approved as standard equipment by all electric truck manufacturers. For further information, use the coupon below.

*\*T. M. Reg.*

FREE BOOKLET!

# C&D

BATTERIES, INC.

*Consolidated*

Manufacturers of Industrial  
Batteries Since 1906

C&D BATTERIES, INC.  
CONSHOHOCKEN, PA., DEPT. 2A

Gentlemen:

Please send me your latest battery bulletins

NAME \_\_\_\_\_

FIRM \_\_\_\_\_ TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

NAME AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

Circle No. 22 on Reader Service Card for more information

## AD LITERATURE

*Continued*

**Tote Boxes Pay Off:** Nestier pays off again, says The Chas. Wm. Doepke Mfg. Co., Inc., of its tiering tote boxes. They nest to save space and, filled, they tier in rigid stacks with contents of each unit visible and easily accessible. Complete information, or an actual demonstration, is available.

Circle 42 on Reader Service Card

**User-Designed Truck:** Clark Equipment Company tells about the 1954 Powrworkers, a line of electric trucks that are said to be designed and engineered with the user in mind. Detailed job studies in customer plants, warehouses and terminals dictated the features of the line.

Circle 28 on Reader Service Card

**Hoists Pay Off:** Harnischfeger Corporation tells about a company which figured it would save a little time if it bought a P&H hoist to lift stone slabs from the ground to the work area. It did. In fact, after the first week's operation, one year's cost had been saved.

Circle 63 on Reader Service Card

**Overhead Cranes:** The Cranemaster Catalog No. C120 is available from Abell-Howe Company, and the company invites you to make a check and comparison of its specifications and quotation to find just how much your crane dollar can buy.

Circle 162 on Reader Service Card

**Two Trucks in One:** The Truck-Man Model 40 is two trucks in one, according to Truck-Man, Div. of The Knickerbocker Co. Not only can it work indoors, but it has the power, traction and footing to do a job outdoors.

Circle 136 on Reader Service Card

# High lift, Big load capacity, Wheeler speed charge hoppers at lower cost

Bin-batching costs drop fast when mixing plants load hoppers with high-lift, long reach, fast-moving MM Wheeler-Loader units.

Loader attachments, built specifically for 30 hp. RTI and 57 hp. UTIL Minneapolis-Moline Wheelers, reach *up* to load the highest hoppers, *out* to fill trucks, cars, conveyors.

With exclusive shuttle speeds and instant reversing, the UTIL combines high rate of travel and hydraulic pump efficiency to make each load-and-dump trip in shortest possible time.

Reserve Wheeler power and greater torque at moderate rpm keeps Wheelers operating in heaviest going. For short, fast maneuvering in congested areas, Minneapolis-Moline offers heavy-duty power steering



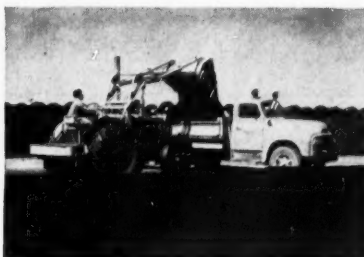
at lower cost. For any loading job, call in your Minneapolis-Moline dealer-distributor. Let him demonstrate how you can save money by replacing expensive, less maneuverable equipment with lower-cost time-saving Minneapolis-Moline Wheeler units.



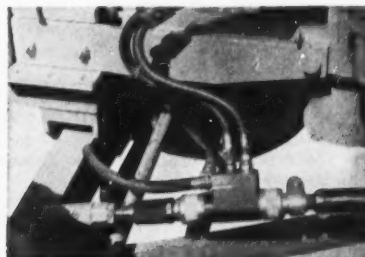
**MINNEAPOLIS-MOLINE**  
Minneapolis 1, Minnesota



Owner of this St. Paul, Minn., mixing plant replaced two loader outfits with this MM Wheeler-Loader unit, loads bins for less.



Wheeler maneuverability plus good bucket control speeds up surface mixing operations. Shuttle gearing spots loads in half the time.



UTIL Wheelers available with hydraulic POWER-flow steering for maximum operating ease. Built-in safety features insure constant control.

Circle No. 96 on Reader Service Card for more information

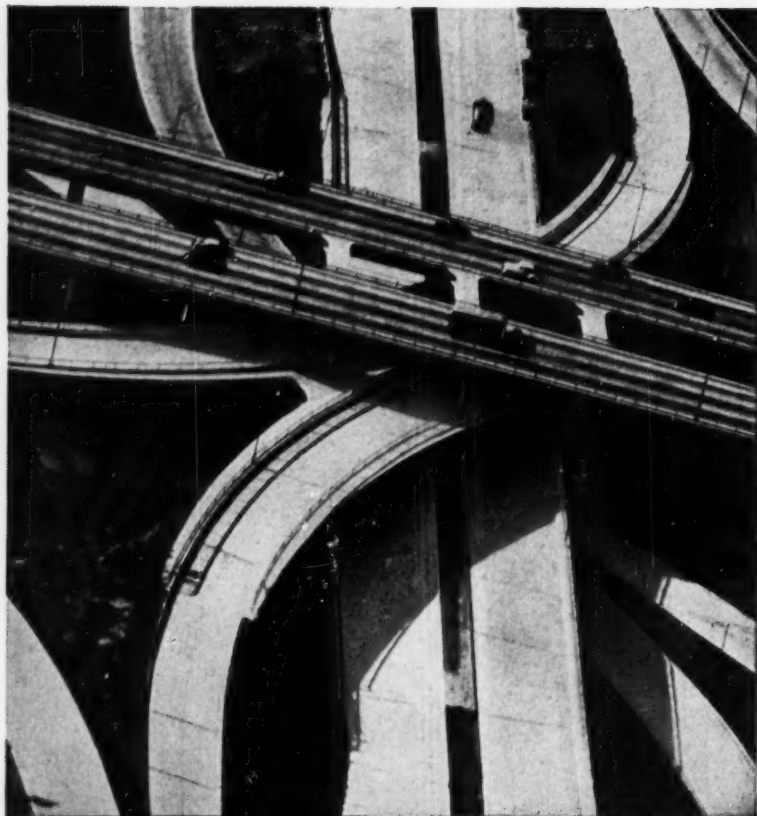


Photo courtesy of the California Division of Highways.

when you can't

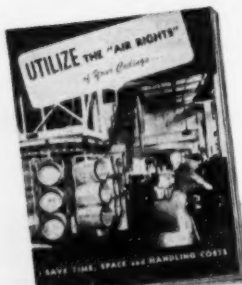
## SPREAD OUT, SPREAD UP!

... like the elevated super-highways all over the country. Eliminate expensive congestion of production traffic by taking to the air.

**Lamson Engineered Overhead Trolley Conveyor Systems** are daily providing the answer to progressive industry. For as with highway traffic, our engineering studies of individual plants problems often show the solution is overhead.

The answer to your problem may well lie in a Lamson Engineered Overhead Trolley Conveyor System. It costs nothing to find out...

Plants in Syracuse and San Francisco  
Offices in principal cities



**LAMSON CORPORATION • 2403 Lamson Street, Syracuse 1, N. Y.**

Yes, I'd like to know more about Lamson Engineered Overhead Trolley Conveyor Systems. Please send me the 20-page engineering brochure, "Air Rights"...no obligation, of course.

Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_ 3309

Circle No. 157 on Reader Service Card for more information

### AD LITERATURE

*Continued*

**Open Mesh Baskets.** How you can increase your handling efficiency with Jaxon open mesh baskets is detailed in literature available from Jaxon Wire Products. Complete information is included.

Circle 77 on Reader Service Card

**Give Economy a Lift:** There is one sure way to cut your load-handling costs, according to Manning, Maxwell & Moore, Inc., and that is to use the economical "Budgit" electric hoist. Bulletin 391 gives complete details.

Circle 84 on Reader Service Card

**Tongs to Lift Anything:** Heppenstall Company says there's no limit to the range of jobs that Heppenstall Safe-T-Tongs handle quickly, safely and economically. Complete information and technical assistance are available.

Circle 65 on Reader Service Card

**For Liquid Handling Problems:** Blackmer Pump Company offers to prove that wherever liquids are handled, Blackmer pumps are known for quality, dependability and record durability. You can get complete details.

Circle 150 on Reader Service Card

**Eliminate Dumping Bottlenecks:** A complete catalog from Colson Equipment & Supply Company is said to contain answers to lifting and dumping bottlenecks through use of the company's skip-hoist dumpers.

Circle 31 on Reader Service Card

**Carpet Handling, Storing:** Easiquip Company says its best recommendations are the country's leading carpet mills, distributors and retailers who use the Easiquip system for handling and storing broadloom carpet.

Circle 43 on Reader Service Card





# the crane with the **BOARDING HOUSE REACH**

## **AUSTIN-WESTERN HYDRAULIC CRANE**

### **with telescopic boom**



It's the **LIVE BOOM** that puts the A-W Hydraulic Crane out front in the performance parade . . . live power with instant response for all boom movements . . . extending and retracting, raising and lowering, and rotating. Fingertip hydraulic control places the load exactly where it is wanted; handles delicate spotting jobs with superb precision.

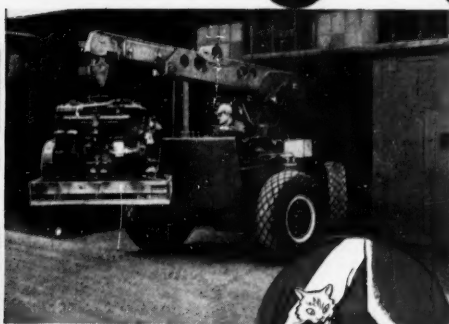
No other mobile crane has a boom so completely "alive". . . no other outdoor-indoor crane will handle so many jobs, so well.

**SEE  
what it does -**



#### **Reaches Far, High**

... changes boom length and boom angle quickly and easily while under load.



#### **Raises and Lowers**

... picks up maximum loads, and transports them through low-clearance doors.



#### **Rotates 360°**

... simplifies and speeds up many operations, especially when working in close quarters.



## **AUSTIN-WESTERN COMPANY**

Construction Equipment Division • Baldwin-Lima-Hamilton Corporation

**AURORA, ILLINOIS, U.S.A.**

Power Graders • Motor Sweepers • Road Rollers • Hydraulic Cranes

AUSTIN-WESTERN COMPANY, 620 Farnsworth Avenue, Aurora, Illinois  
Please send complete information and literature on the Austin-Western Hydraulic Crane.

Name .....

Title .....

Company .....

Street .....

City ..... Zone ..... State .....

Other products: Power Graders, Motor Sweepers, Road Rollers



**Materials really move...**

**when your cranes and hoists  
are powered by...**

## **FEEDRAIL® Trolley Busways**

### **PICTURED ABOVE**

View of FEEDRAIL-powered bridge crane and hoist at receiving department in the plant of a leading automotive manufacturer. By means of a system of interlocking bridges, runways and mono-rails, materials can be transported to and from any point in the building—with FEEDRAIL's trolley outlets traveling right along, providing SAFE, uninterrupted power.

There are no time-consuming, costly traffic hold-ups when shipping and receiving department cranes and hoists are powered by FEEDRAIL Trolley Busways. FEEDRAIL's expertly engineered design makes it a completely safe, trouble-free system of electric power distribution.

What's more—it's *adaptable*—first, because practically any place a crane or hoist can go in receiving, production, staging and shipping areas, FEEDRAIL will go—and, second, because an installation can be readily modified or expanded to meet the needs of changing requirements.

**GET** the whole eye-opening story of FEEDRAIL Trolley Busways by writing for complete descriptive literature. Address Dept. F-3.



**SOLD BY MORE THAN 1,000 ELECTRICAL DISTRIBUTORS FROM COAST TO COAST**

CH4-1



*Never Becomes Obsolete*

**FEEDRAIL CORPORATION**

Subsidiary of Russell & Stoll Company, Inc.  
125 BARCLAY STREET • NEW YORK 7, N.Y.

**SPECIALIZED QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES**

Circle No. 50 on Reader Service Card for more information

## **AD LITERATURE**

*Continued*

### **Increase Storage Capacity:**

You can increase your storage capacity with a Swing-Shift unit added to your lift truck, according to Swing-Shift Mfg. Co. Complete details on this hydraulic fork control attachment are available.

Circle 129 on Reader Service Card

### **Air Pumps:**

Bulletin A-1399 from Kraissl Company tells how the new Kraissl Class 23 pumps completely eliminate undesirable oil vapors from discharged air. They are specifically designed for all packaging and printing machinery and similar applications.

Circle 78 on Reader Service Card

### **Engineered Conveying Systems:**

The Alvey-Ferguson Company invites you to obtain a discussion of latest scientific handling methods. The company engineers all types of conveying systems for all types of industry.

Circle 3 on Reader Service Card

### **Floating Docks:**

Complete data on Christensen floating docks is available from Wm. Christenson Co., Inc. Design of the units provides for up and down counter balance movement to meet varying truck heights.

Circle 171 on Reader Service Card

### **Rugged Power:**

Rugged and raring to go is how Gould-National Batteries, Inc., describes battery-powered industrial trucks. Complete information on Gould industrial batteries is available.

Circle 60 on Reader Service Card

### **Complete Truck Line:**

Lewis-Shepard Products Inc. offers information on any of its complete line of trucks—from lightweight two-wheelers to heavy duty fork trucks.

Circle 81 on Reader Service Card

# Wheel Mounting adds EXTRA CAPACITY and GREATER MOBILITY

To **LIMA**  
Types 34, 44, 604  
and 703

## COMPARE!

No other machine gives you  
as much as LIMA!

1. All gears, smaller parts and shafts which are subject to extra wear, are flame or induction hardened for longer life.
2. Main machinery is placed well back of center of rotation, to eliminate excess counterweight.
3. Anti-friction bearings, used at all important bearing points, reduce destructive friction, fuel consumption and lubrication requirements.
4. Big capacity drums and sheaves, lengthen cable life by reducing the need for double wrapping and sharp bends in cable.
5. Propel and swing gears and power take-off, are enclosed in a sealed oil bath for dirt elimination and smoother, quieter operation.
6. Torque converter (optional), automatically adjusts speed to load requirements, minimizing shock loading, making performance smoother and faster.
7. Wherever you are, you can depend on skilled service and nearby warehouse stocks of parts, to keep your LIMA on the job continuously.



Illustrated above is the LIMA Type 34 mounted on wheels to provide the advantages of better mobility and extra capacity where ground conditions permit its application. Four sizes are now available with wheel mounting—the Types 34, 44, 604 and 703. Wheel mounted Type 34 has a crane capacity of 20-tons. Wheel mounted Type 44 has a crane capacity of 25-tons. Wheel mounted Type 604 has a crane capacity of 35-tons. Wheel mounted Type 703 has a crane capacity of 45-tons. (Capacities rated with outriggers supported.) In these units one engine powers all operations, including travel, and one operator controls them all from his cab. LIMA wheel mounted machines are ideal for many material handling operations requiring constant movement around the job. They will save travel time and reduce cost of moving machine between scattered job sites—often justifying the use of equipment on even the smallest operation.

## TRUCK MOUNTED MACHINES ALSO AVAILABLE

You can now also get the LIMA Type 34, 44, and 604 in a truck mounted unit, with separate engine for traveling between jobs at speeds up to 31 MPH. Crawler-mounted LIMA machines are available in Shovel capacities from  $\frac{3}{4}$  to 6 yds., Cranes to 110 tons and Draglines variable.

DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD

**LIMA**  
SHOVELS • CRANES  
DRAGLINES • PULLSHOVELS



**BALDWIN-LIMA-HAMILTON CORPORATION**  
Construction Equipment Division  
LIMA, OHIO, U.S.A.

Construction Equipment Division

Circle No. 155 on Reader Service Card for more information

## AD LITERATURE

Continued

**Space, Labor Saver:** You can save two-thirds of your floor space with the A-B-C Short Case Sealer, with increased packaging efficiency, more speed and less expense. Complete details are available

from A-B-C Packaging Machine Corporation.  
Circle 11 on Reader Service Card

**Cut Shipping Costs:** An illustrated brochure from Evans Products Company tells about the Evans D-F Loader which secures, supports and separates loads in box cars. Substantial savings are realized from reduced damage claims.

Circle 47 on Reader Service Card

**Crane Weight Indicator:** Literature from Martin-Decker Corp. tells how the new Martin-Decker S-6 crane weight indicator warns your crane operator of an excessive load before he actually lifts it.

Circle 86 on Reader Service Card

**Guaranteed Hand Trucks:** The American Pulley Company offers a bulletin on its line of hand trucks which are guaranteed for five years. The company will repair or replace any truck which fails in service.

Circle 6 on Reader Service Card

**Selecting Yard Cranes:** "Handbook of Data for the Proper Selection of Industrial Yard Cranes" is made available by Wayne Crane Division, American Steel Dredge Co. Inc.

Circle 143 on Reader Service Card

**Sheet Grabs:** Sheet grabs for all conditions are among the more than 500 styles of grabs available from Mansaver Industries, Inc. Just circle the number below for the company's complete catalog.

Circle 85 on Reader Service Card

**All-Steel Containers.** The Powell Pressed Steel Co. says you can't be sure you're handling it as efficiently as possible until you've checked with Powell. Complete information on the company's line of all-steel containers is available.

Circle 107 on Reader Service Card

**Combination Trucks:** Small or large firms are invited by Market Forge Co. to obtain full information on their new line of combination material handling equipment.

Circle 87 on Reader Service Card

**Lifters, Grippers and Clamps:** A wide assortment of muscle- and time-saving devices for handling drums, barrels, sheets and other shapes is described in information available from Merrill Brothers.

Circle 91 on Reader Service Card

## Here's HAND TRUCK News!

### GUARANTEE

If this AMERICAN HAND TRUCK fails in service for any reason (normal wear on rubber tread wheels or corrosive attack excluded)—within five years from date of delivery—return it freight prepaid for repair or replacement to

THE AMERICAN PULLEY COMPANY  
4200 Wissahickon Ave., Philadelphia 29, Pa.

SAVE THIS CARD—IT'S YOUR GUARANTEE

**ONLY  
AMERICAN  
GIVES YOU  
THIS  
GUARANTEE**

Clip and Mail Coupon  
For Bulletin



Materials Handling by



Complete line of Pressed-Steel Hand Trucks,  
Barrel Cradles, and Steelite Industrial Wheels

*The American Pulley Company*

4200 Wissahickon Ave. Philadelphia 29, Pa.

Gentlemen:

Please send me your latest bulletin on American Hand Trucks.

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Circle No. 6 on Reader Service Card for more information

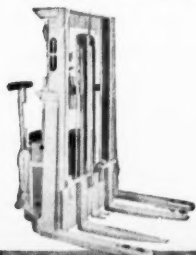


# Modern Materials HANDLING?

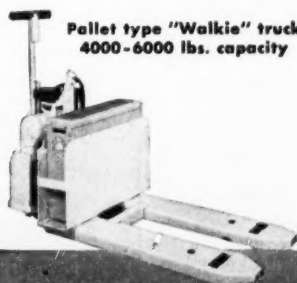


Our illustrated Indian family helps to prove a point . . . old fashioned, inadequate materials handling techniques may be costing you money . . . money that perhaps could be converted into profit. It costs you *nothing* to investigate the MOTO-TRUC "Walkie" line . . . and most important . . . **THERE'S A MOTO-TRUC FOR EVERY PURPOSE.** Write for Bulletin No. 53.

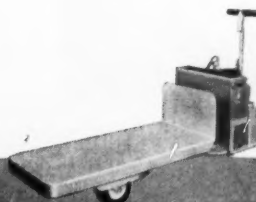
Hi-lift "Walkie" type  
3000-4000 lbs. capacity



Pallet type "Walkie" truck  
4000-6000 lbs. capacity



Platform "Walkie" type  
4,000-10,000 lbs. capacity



Grip-All Tractor



*The* **MOTO-TRUC Co**

Representatives in Principal Cities

1955 E. 59th St. • Cleveland 3, Ohio  
Pallet . . . Platform . . . Hi-Lift Trucks  
LARGEST EXCLUSIVE MANUFACTURER  
OF "WALKIES"

Circle No. 100 on Reader Service Card for more information

## Have you investigated the **LOAD LUGGER**\* for bulk collection and disposal of refuse?



### COLLECTING

Patented containers are low, fill easily from three sides and the top, fill all the way, are water-tight halfway up, shut tight against flies and odors, can be locked against "free loaders."



### PICKING UP

With safe load distribution, powerful hydraulic arms lift container to flat deck of **LOAD LUGGER** (easily mounted on any standard truck chassis and operated by the driver from his cab).



### HAULING

With load well forward and no clumsy superstructure or excess weight, the cleanly designed **LOAD LUGGER** carries more pay load on a given truck chassis than any comparable equipment.



### DISPOSING

Controlled vertical tilt and full discharge door, spring-loaded to open and close automatically, afford complete and safe dumping of all contents (no troublesome or leaky bottom opening).

Two **LOAD LUGGER** series are available for bulk collection and disposal of refuse: a 9000-pound pay load model with 6, 8 or 10 cubic-yard containers, and a 12000-pound pay load model with 8, 10 or 12 cubic-yard containers. Other **LOAD LUGGER** models carry maximum loads of 4500 to 26000 pounds.

The **LOAD LUGGER SYSTEM** lets one truck and driver do the work of many by continually picking up, hauling (then dumping, spreading, pouring or delivering the load) and returning a number of **LOAD LUGGER** containers or pallets to strategic locations for filling at operational convenience.

\* registered trade mark of and manufactured by **BROOKS EQUIPMENT & MFG. CO.**, KNOXVILLE 24, TENNESSEE. Used all over the world. Write for catalog and price list.

Circle No. 1 on Reader Service Card for more information

## AD LITERATURE

*Continued*

**Pressure-Sensitive Strapping:** For use—and savings—all over the plant, Behr-Cat strapping tape is intended for wrapping, packing and bundling jobs. Behr-Manning Corp. will provide full information on how it can help with your strapping problems.

Circle 21 on Reader Service Card

**No Packaging Failures:** Samples and test data can be obtained from Mid-States Gummed Paper Co., producers of Green Core Barrier Raps, to show how packaging of metal parts for the armed forces has produced a perfect record.

Circle 94 on Reader Service Card

**Savings and Speed:** Bulletin No. 500 by Brummeler Steel Products Corp. provides information on the firm's complete line of part boxes and self-dumping hoppers—which are designed to save valuable floor space and labor, speed handling and production.

Circle 158 on Reader Service Card

**For Cost-Conscious Firms:** If handling flowable products like bulk chemicals, food, metal chips, sludge, coal or clay is your problem, Bulletin F-354 of Hapman Conveyors, Inc., is offered to help solve it.

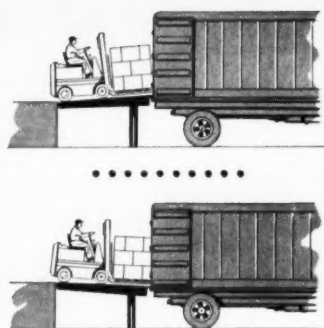
Circle 62 on Reader Service Card

**Packaging Ideas:** Facts and free samples are offered by Angier Corp., to acquaint you with their spiral wrapping, VPI Wrap, and reinforced Snake Tape.

Circle 7 on Reader Service Card

**Slings of Woven Wire:** An illustrated catalog produced by The Cambridge Wire Cloth Co. tells of the advantages of Gripper Slings for a wide variety of tough handling jobs.

Circle 23 on Reader Service Card



**Moving Up or Down,** the Leva-Dock Ramp keeps on the level with the truck or trailer bed. It compensates 4 ways for varying truck bed heights, out-of-level trucks, and truck spring deflection. Loading and unloading operations are made faster, safer.

## New HYDRAULIC RAMP makes big savings at your loading docks

**FASTER HANDLING • LESS BREAKAGE • GREATER SAFETY**

The LEVA-DOCK is a hinged, self-leveling ramp positioned by an hydraulic jack. It fits into your loading dock, as shown above, so that power trucks can move in and out of trucks and trailers without using steel plates, bridge ramps or slow and expensive methods.

The LEVA-DOCK platform will support 20,000 lb. loads in operating position. It becomes a part of the loading dock floor when not in use. A new automatic safety device pre-

vents accidents and costly, time-consuming delays.

Operation of the LEVA-DOCK RAMP is by self-contained electric power unit or compressed air—very economical. Installation is simple. Dependability is assured by Rotary's experience in building over 75,000 elevating devices.

Hundreds of LEVA-DOCK RAMPS are already in use, giving excellent service and effecting substantial savings in loading costs.

**Now available at new lower prices**

**6 NEW MODELS** - For operation by electric power unit or compressed air



# LEVA-DOCK RAMP

**Mail coupon for complete data and prices**

ROTARY LIFT CO.,  
1135 Kentucky, Memphis 2, Tenn.

Send information on new LEVA-DOCK RAMPS to:

Name \_\_\_\_\_

Address \_\_\_\_\_



# dig this powerful ditcher

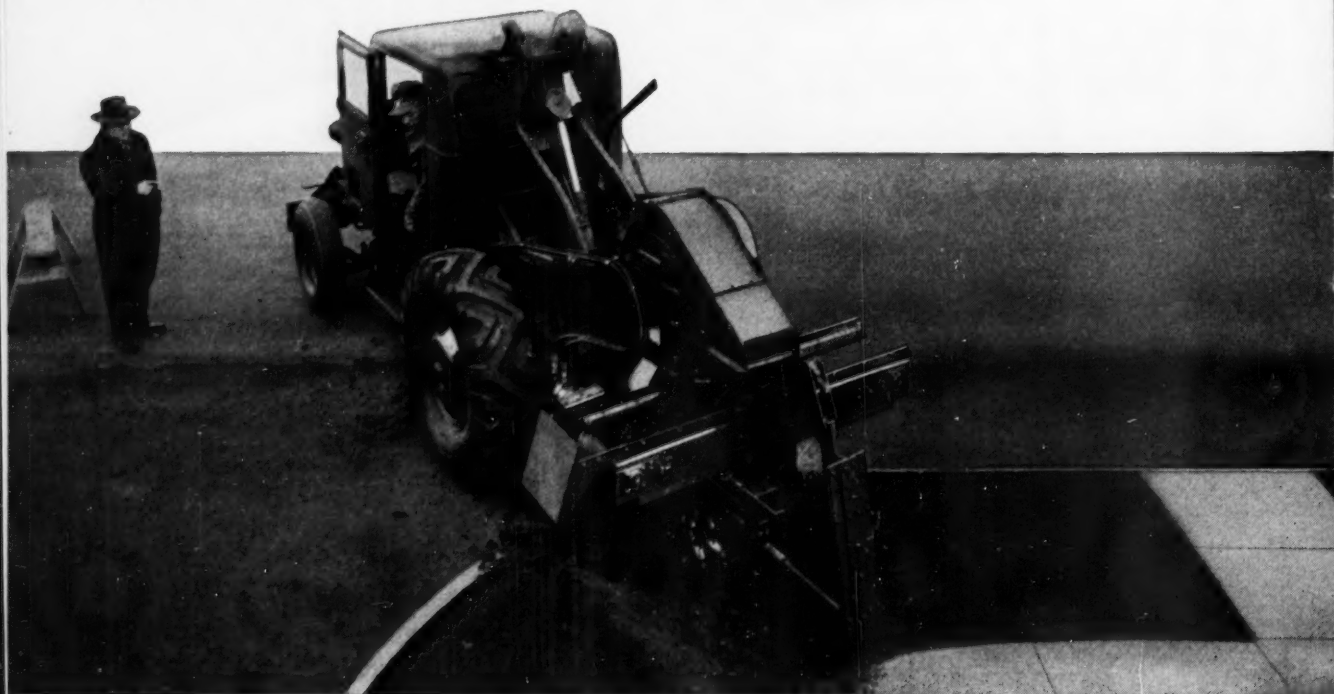


PHOTO COURTESY BARBER-GREENE COMPANY, AURORA, ILLINOIS

## Chrysler power and gýrol Fluid Coupling team up to put the "run" in runabout.

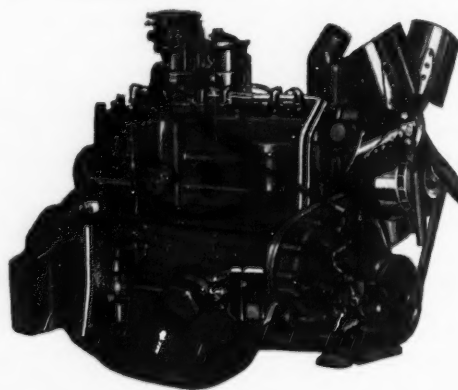
When the operator of this ditcher "lowers the boom" things happen fast. That's because the vertical boom concentrates the weight of the unit on the work, bringing additional pressure to bear on digging buckets. This, in turn, allows them to bite into practically any kind of ground formation, frozen soil or even bituminous pavement. Upon completion of digging, a simply-operated hydraulic control raises the boom and the unit takes off—automotive style—down the highway to the next job.

Behind the power and dexterity of the Barber-Greene Runabout is the Model 8 Chrysler Industrial Engine and Chrysler gýrol Fluid Coupling. This 250 cubic inch displacement engine with its wide speed range drives the bucket line, crowds the ditcher along the trench, supplies power to the hydraulic boom hoist and takes the ditcher to the next job at traffic speeds. Chrysler gýrol Fluid Coupling helps the operator coordinate crowding and bucket line speeds for maximum digging efficiency.

If your equipment requires power within our 217 to 413 cubic inch displacement range, engines that will operate equally well with gasoline, natural or L-P gas fuels, engines ideally suited to power take-off, then see a

Chrysler Industrial Engine Dealer. He can supply engines equipped at the factory for their jobs in the field.

Remember too that Chrysler Power is not expensive. Production-line methods adapted to specialized industrial engine building provide a custom-built engine at mass-production prices. If you prefer, write: Dept. 203, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.

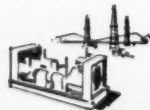
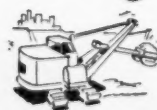


## CHRYSLER Industrial Engines

HORSEPOWER



WITH A PEDIGREE



AGRICULTURE • INDUSTRY • CONSTRUCTION • OIL FIELDS

Circle No. 27 on Reader Service Card for more information





How Westinghouse defines, determines and controls costs of handling is described by C. J. Schwarzer of the Materials Handling Section, Industrial Dept., East Pittsburgh Works

## Handling Analysis...

# Prerequisite for Cost Control

**S**CIENTIFIC MATERIAL HANDLING is the movement and storage of materials at the lowest possible cost through the use of proper methods and equipment."

This definition implies the fundamental objectives are: (1) to save money; (2) to save time; (3) to save men by making work easier and safer through the use of better methods and equipment. This is a challenge because the basic problem is to recognize a material handling operation.

A material handling cost is encountered in industry whenever an object or a material is moved, shoved, lifted, rolled or adjusted. Material handling is the expenditure of effort. Effort is horsepower, and manual horsepower costs 250 times as much as electric horsepower.

The Twentieth Century Fund reports that power developed by human muscles costs on the average of 10 dollars per horsepower hour. Man made some savings when he employed animal muscles, but this power still costs about 75 cents per hp. hour. Electricity costs four cents or less. It doesn't take much mathematics to indicate that a saving of \$9.96 per hp. hour quickly pays for a powered hoist to eliminate the so-called "hernia" method.

Material moved a distance of 200 feet by a unit

load system (fork truck and pallet or similar operation) can be moved for as little as 1/65th of the cost of moving the same material by hand.

For example: A pile of 1000 units is to be moved a distance of 200 feet.

*(Editor's Note: These examples are for purposes of illustration—indicating the type of costs that can be involved in an operation. Such factors as type of operation, tonnage to be handled, frequency of movement required, and spatial relationships of operations must be considered in any practical decision on methods.)*

A man carrying a small number of units in his hands and walking the distance of 200 feet with each load requires an expenditure of \$38.30 for labor.

Give him a two-wheel hand truck to increase his efficiency by handling a larger load per trip and cost will be decreased by more than 50 percent.

The use of a four-wheel hand truck permits greater loading per trip and reduces labor to \$11.60.

A suitable conveyor may improve the situation even more. The steady flow from loading end to dis-

*(More on next page)*

This article is written from a paper presented to the Material Handling Division at the recent annual meeting of the American Society of Mechanical Engineers.

# **MATERIAL HANDLING OPERATION ANALYSIS**

Form No. \_\_\_\_\_  
State Problem & Results Desired \_\_\_\_\_

## **MATERIAL & CONDITIONS:**

Gen. Description of Material \_\_\_\_\_

### **CLASSIFICATION**

Gas \_\_\_\_\_  
Liquid \_\_\_\_\_  
Semi-solid \_\_\_\_\_  
Solid \_\_\_\_\_  
Bulk \_\_\_\_\_  
Piece \_\_\_\_\_  
Package \_\_\_\_\_  
Reg. Shape \_\_\_\_\_  
Irreg. Shape \_\_\_\_\_

### **WEIGHT**

Length \_\_\_\_\_  
Width \_\_\_\_\_  
Height \_\_\_\_\_  
Diameter \_\_\_\_\_  
Area \_\_\_\_\_  
Volume \_\_\_\_\_  
Screen Size \_\_\_\_\_  
Density \_\_\_\_\_  
Weight \_\_\_\_\_

### **ACID**

Alkaline \_\_\_\_\_  
Corrosive \_\_\_\_\_  
Toxic \_\_\_\_\_  
Irritant \_\_\_\_\_  
Polymers \_\_\_\_\_  
Volatile \_\_\_\_\_  
Combustible \_\_\_\_\_  
Perishable \_\_\_\_\_

### **CHARACTERISTICS**

Frangible \_\_\_\_\_  
Abrasile \_\_\_\_\_  
Free Flowing \_\_\_\_\_  
Sticky \_\_\_\_\_  
Dusty \_\_\_\_\_  
Gily \_\_\_\_\_  
Hot (°F) \_\_\_\_\_  
Cold (°F) \_\_\_\_\_  
Wet \_\_\_\_\_  
Dry \_\_\_\_\_

Is Material Now In Container? Describe \_\_\_\_\_

Are Containers Returned? \_\_\_\_\_

Is Weighing, Counting, Measuring Required? \_\_\_\_\_

What Protection Should Be Provided? Check: Light \_\_\_\_\_, Cold \_\_\_\_\_, Rain \_\_\_\_\_

Dampness \_\_\_\_\_, Sun \_\_\_\_\_, Contamination \_\_\_\_\_

Such \_\_\_\_\_

Pillage \_\_\_\_\_

Other \_\_\_\_\_

Are Any Special Hazards Or Quality Control Problems Involved? \_\_\_\_\_

Can The Material Be Stacked? \_\_\_\_\_

Backrest \_\_\_\_\_

### **LOGISTICS:**

Material Arrives At Present Location Via \_\_\_\_\_

Quantity Received At One Time \_\_\_\_\_

Frequency Of Receipts \_\_\_\_\_

\_\_\_\_\_ & Storing \_\_\_\_\_

Quantity To Be Handled At This Operation (Give Rate Per Min., Hour, Day, Etc.) \_\_\_\_\_

Uniformity Of Movement \_\_\_\_\_

Movement From (Location) \_\_\_\_\_ To \_\_\_\_\_

Approx. Distance Horiz. \_\_\_\_\_ Vertical \_\_\_\_\_

Indoor \_\_\_\_\_ Outdoor \_\_\_\_\_ Between Floors \_\_\_\_\_

Between Buildings \_\_\_\_\_ Between Plants \_\_\_\_\_

On Public Carriers \_\_\_\_\_

### **STORAGE DATA:**

Normal Inventory \_\_\_\_\_ Max. \_\_\_\_\_ Min. \_\_\_\_\_

Stored In (Location) \_\_\_\_\_ By (Method) \_\_\_\_\_

Method Of Disbursing \_\_\_\_\_

Frequency Of Issues \_\_\_\_\_

What Is Method Of Inventory Control \_\_\_\_\_

### **CONTAINER DATA:**

Is Packaging Required Or Desired? \_\_\_\_\_

If So, Decorative Or Functional? \_\_\_\_\_

What Is The Optimum Unit Load? \_\_\_\_\_ Size \_\_\_\_\_

Weight \_\_\_\_\_ Other \_\_\_\_\_

Check The Following Container Features Applying:

Open \_\_\_\_\_ Disposable \_\_\_\_\_ Pallet \_\_\_\_\_ Can \_\_\_\_\_

Closed \_\_\_\_\_ Returnable \_\_\_\_\_ Seal \_\_\_\_\_ Res \_\_\_\_\_

Sealed \_\_\_\_\_ Permanent \_\_\_\_\_ Bin \_\_\_\_\_ Carboy \_\_\_\_\_

Dust Tight \_\_\_\_\_ Collapsible \_\_\_\_\_ Rack \_\_\_\_\_ Bottle \_\_\_\_\_

Moisture Proof \_\_\_\_\_ Securements \_\_\_\_\_ Carton \_\_\_\_\_ Tube \_\_\_\_\_

Vermim Proof \_\_\_\_\_ Paper \_\_\_\_\_ Box \_\_\_\_\_ Reel \_\_\_\_\_

Sanitary \_\_\_\_\_ Wood \_\_\_\_\_ Drum \_\_\_\_\_ Bale \_\_\_\_\_

I.C.C. Reg. \_\_\_\_\_ Metal \_\_\_\_\_ Pan \_\_\_\_\_ Bundle \_\_\_\_\_

Describe Container Or Unit Load Recommended \_\_\_\_\_

## **ENVIRONS & EQUIPMENT (Existing Or Contemplated)**

Type Of Floor \_\_\_\_\_ Condition \_\_\_\_\_

Allowable Floor Loads \_\_\_\_\_

Type Of Overhead Structure \_\_\_\_\_

Allowable Suspended Loads \_\_\_\_\_

Available Elevators - Kind \_\_\_\_\_ Size \_\_\_\_\_ Capacity \_\_\_\_\_

Depress Loading Docks \_\_\_\_\_

Door Clearances \_\_\_\_\_ Ceiling Clearances \_\_\_\_\_

Width Of Aisles \_\_\_\_\_

Ramps \_\_\_\_\_

Roadways \_\_\_\_\_

Description Of Pallets, Bins, Shelving, Etc. Available \_\_\_\_\_

\_\_\_\_\_

Description Of Available Cranes Or Hoists \_\_\_\_\_

\_\_\_\_\_

Description Of Available Conveyors \_\_\_\_\_

\_\_\_\_\_

Description Of Available Mobile Equipment \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

IN ANALYZING material handling operations at Westinghouse, and, subsequently, costs of handling, one of the forms used is a four-page, 8 1/2 x 11 in. folder, reproduced here in abbreviated, single sheets. At top left is first page; top right, second page; bottom left, third; and bottom right, fourth.

## **OPERATION AND FLOW PROCESS CHART**

Apparatus \_\_\_\_\_

Material \_\_\_\_\_

Delivered To \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Style No. \_\_\_\_\_

Compiled By \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Received From \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sub No. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Item No. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Time And Symbol \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Notes \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Cost Control . . . cont'd

charge end cuts time in transit and simplifies handling. Labor cost is reduced to \$10.00.

The fork truck comes into the picture with fast handling of a large quantity load and cuts cost to \$5.59.

With the material properly unitized for a complete transfer in a single load easily picked up by an overhead crane, fork truck or similar device, labor cost is but 59 cents.

### Handling Costs a Third of Production Cost

Material handling is the challenge of a frontier in manufacturing. With increasing labor and material costs, it is logical to employ methods to reduce the cost of the intangibles. Unnecessary material handling adds only cost and no value to a product. On the average, 33 cents out of every production dollar cost is chargeable to material handling.

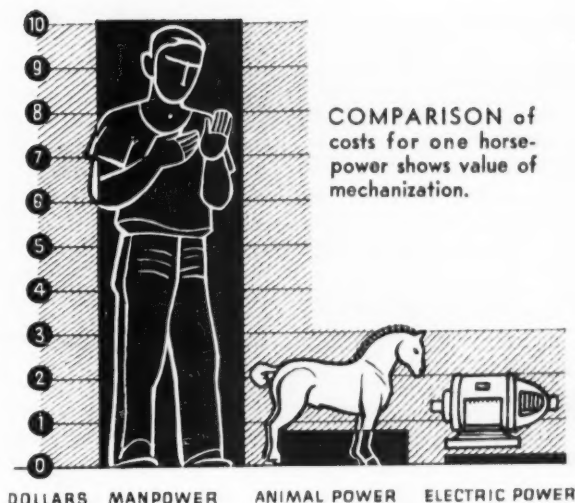
Considerable study must be given a plan for improvements since an expenditure of funds is almost always needed. The size of the plant and the number of men involved will make the problem vary in complexity. The large manufacturer will probably have a step by step procedure that includes phases applicable to smaller manufacturers.

The various channels usually considered to achieve reduced handling costs and improved operations can be listed as follows: (1) plant planning and layout; (2) plant facilities forecast; (3) annual appropriations review; (4) equipment supplier negotiations; (5) shipping and traffic operations; (6) plant transportation system; (7) material handling improvement programs; (8) material handling training.

**Plant Planning and Layout:** Products are constantly changing both in design and volume of production, thus making planning and plant facilities a constant program. Experience has taught that proper planning of new operations and proper layout of new plans can eliminate many costly and hazardous operations. Careful scrutiny of each case from the standpoint of efficient handling is the foundation of successful operation.

**Plant Facilities Forecast:** To chart a course and develop a pattern that reconciles market forecast, plant facilities should be given a three or four year "look-ahead". This survey includes the anticipated requirements for material handling facilities, plant rearrangement, and expansion in other facilities. A man with a plan has a better chance for success than a man without one! So, it is necessary to peer into future problems as well as tackle those of today.

**Annual Appropriations Review:** Too many times a good material handling improvement is "pigeon-holed" until funds are made available to purchase the required new equipment. Provision for



additional plant facilities and equipment for the coming year is usually made according to specific items with estimates of costs. This might be called the shake-down, or the "crystal ball gaze," or a forecast into reality. Selling a program to management may take a clever presentation. "Before and after" photographs are quite effective, not only as a progress report but also as a stimulant to the imagination of what can be done.

**Equipment Supplier Negotiations:** Wise spending of money allocated for new equipment calls for a material handling man to work as closely as possible with purveyors of the desired equipment. They are specialists in a field and can make many worthwhile suggestions. The coordination of the best thinking of equipment supplier, engineering staff, operating personnel, and, quite often, that of a consultant should result in the best possible plant facilities.

**Shipping and Traffic Operations:** The closest cooperation between purchasing and traffic is a must. Constant work with suppliers—advising them how to ship materials to the plant so that there is the smallest number of problems in receiving, temporary storage, and movement to the processes—is necessary. A traffic manager's work calls for continued discussion with customers to determine the best way to ship products since packaging and final shipping costs add five to eight percent to a product's cost. Combining these activities under one organization means material handling operations can be effectively controlled.

**Plant Transportation Systems:** This generally includes the use of railway equipment, highway trucks, and industrial vehicles. The department operates and maintains a full complement of portable material handling equipment and services the entire plant. Generally speaking, they aid the manufacturing departments with their in-process handling problems

(More on next page)

## MATERIAL HANDLING PROJECT

**TABLE 1—MATERIAL HANDLING PROJECT**

DIVISION \_\_\_\_\_ WORKS \_\_\_\_\_ COMPILED BY \_\_\_\_\_ REVISED BY \_\_\_\_\_ APPROVED BY \_\_\_\_\_  
 BUILDING NUMBER \_\_\_\_\_ SECTION NUMBER \_\_\_\_\_ DATE COMPILED \_\_\_\_\_ DATE REVISED \_\_\_\_\_ DATE APPROVED \_\_\_\_\_  
 PROBLEM AND OBJECTIVES: \_\_\_\_\_

TABLE 4—HANDLING ACTIVITY

[illegible]

TABLE 6—HANDLING COST AND SAVINGS

[illegible]

TABLE 2—BUILDING CHARACTERISTICS

NUMBER OF FLOORS \_\_\_\_\_ FLOOR NO. OF PROJECT \_\_\_\_\_  
 CEILING HEIGHT \_\_\_\_\_ TRUSS STRENGTH \_\_\_\_\_  
 DOORWAYS IN PATH OF TRAVEL \_\_\_\_\_  
 WIDTH: \_\_\_\_\_  
 HEIGHT: \_\_\_\_\_  
 OVERHEAD CLEARANCE: \_\_\_\_\_ ASBLE WIDTHS: MIN. \_\_\_\_\_ MAX. \_\_\_\_\_  
 RAFT CONSTRUCTION: \_\_\_\_\_ LENGTH: \_\_\_\_\_ WIDTH: \_\_\_\_\_ GRADE: \_\_\_\_\_  
 FLOOR SURFACE: \_\_\_\_\_ CONDITION: \_\_\_\_\_ CAPACITY: \_\_\_\_\_ LBS.  
 ELEVATOR: WIDTH: \_\_\_\_\_ HEIGHT: \_\_\_\_\_ DEPTH: \_\_\_\_\_ CAPACITY: \_\_\_\_\_ LBS.

TABLE 3—MATERIAL &amp; CONTAINER

DESCRIPTION OF MATERIAL: \_\_\_\_\_  
 PHYSICAL CONDITION (FRAGILE, WET, EXPLOSIVE, ETC.): \_\_\_\_\_  
 SHAPE: \_\_\_\_\_  
 SIZE RANGE: \_\_\_\_\_  
 WEIGHT RANGE: \_\_\_\_\_  
 CONTAINER (NO. CARTON, ETC. REEL, ROLL, ETC.): \_\_\_\_\_ PALLET CONSTRUCTION: \_\_\_\_\_  
 SIZE OF CONTAINER: \_\_\_\_\_ WT. OF EMPTY CONTAINER: \_\_\_\_\_  
 CONTAINER PACKING (NO. OF PIECES AND TOTAL WT.): \_\_\_\_\_  
 DISPOSAL OF EMPTY CONTAINERS: \_\_\_\_\_

TABLE 5—EQUIPMENT OPERATING COST

[illegible]

### MATERIAL HANDLING COST SUMMARY

ANALYSIS OF COST FOR HANDLING OF		DIVISION		SECTION ELEMENT		PARENT	PROPOSED
PLANT	ELEMENT	PARENT	PROPOSED				
1.	LOADING AND TRANSPORTATION COST OF MTL. AS RECEIVED FROM SUPPLIER.			18.	COST OF SHIPPING CONTAINERS FOR MTL. AS WELL AS SHIPPED MATERIALS.		
2.	SHIPPING, SPOTTING OR TERMINAL CHARGES, ALSO W.T.W. AND A.V.R.W.			19.	COST OF RETURNING CONTAINERS.		
3.	UNLOADING CARRIER AT TERMINAL POINT.			20.	USE FACTOR IN LIFE OF HANDLING EQUIPMENT AND CONTAINER (COST PER MOVEMENT BASED ON LIFE OF EQUIPMENT).		
4.	EMBEDDING OF RECEIVED MATERIAL.			21.	FLOOR SPACE UTILIZATION.		
5.	TEMPORARY STORAGE AT UNLOADING POINT.			22.	PARTIAL LOADING HANDLING. (A) REMAKE INTO PARTIAL LOADS. (B) MOVEMENT AND RETURN OF UNUSED MTL.		
6.	HANDLING TO POINT OF FIRST USE OR STORAGE.			23.	IMPROVEMENT IN WAITING TIME OF OPERATOR.		
7.	REHANDLING FROM STORAGE TO FIRST USE.			24.	IMPROVEMENT IN PAPER WORK.		
8.	HANDLING DURING PROCESSING.			25.	IMPROVEMENT IN TURN AROUND TIME OF TRUCKS OR CARS.		
9.	HANDLING THROUGH FINAL INSPECTION.			26.	IMPROVEMENT IN PREPARED CHARGE FOR TRANSPORTATION, PACKING AND SHIPPING.		
10.	HANDLING THROUGH PACKAGING FOR SHIPMENT.			27.	IMPROVEMENT IN QUALITY. (REDUCTION DEFECTIVE MATERIAL DUE TO HANDLING.)		
11.	HANDLING TO LOADING AREA AND/OR REPACKING (WB-2).			28.	IMPROVEMENT IN LOSSES DUE TO PIECE COUNT, PILFERAGE, MISLOCATION, ERRORS, ETC.		
12.	LOADING ON TO CARRIES.			29.	REDUCTION IN TRAVELING DISTANCE THROUGH MANUFACTURING CYCLE.		
13.	EXPENSE OF BLOCKING LOADS IN CARS OR TRUCKS.			30.	REDUCTION IN MANUFACTURING CYCLE TIME.		
14.	COST OF NEW RETURNABLE CONTAINERS FOR SHIPMENT PER LOAD.			31.	IMPROVEMENT IN INVENTORY CONTROL.		
15.	OVERHEAD EXPENSE OF HANDLING EQUIPMENT REQUIRED FOR EACH METHOD.			32.	HANDLING OF SCRAP FROM POINT OF ORIGIN.		
16.	COST OF DEPRECIATION ON DELAYED LOADS.					Total	
17.	DIFFERENCE IN TRANSPORTATION RATES APPLYING TO SHIPPED LOADS.						

TH

**MATERIAL HANDLING METHOD COMPARISON**  
WESTINGHOUSE FORM

#### MATERIAL HANDLING METHOD COMPARISON

[illegible]

\* PLAY LABOR RATE IS ALLOWED ON ACTUAL TIME



## Cost Control . . . cont'd

and can maintain and service equipment that is used exclusively within a department.

The transportation of materials by means of trucks presents some very interesting cost problems. If material is moved between buildings, or more than 300 feet, an overall plant transportation system is efficient. This arbitrary 300 feet was arrived at by time study and years of practice. Material moved more than 300 feet generally requires some manual operation by the truck driver, material handler, or a crane operator.

With a constantly recurring operation—such as feeding machines from a dispatch station in a closely confined area under the control of one department head—equipment may be purchased and kept in that area to the best advantage.

### Material Handling Improvement Program:

One of the most effective weapons in combatting costs is a material handling improvement program. It is aimed at the elimination of accident hazards, better housekeeping, general improvement of working conditions, as well as reduction in costs.

The shop supervisor is the key-man in recognizing material handling problems in his area. He must understand how to spot problems and what to do about them. However, he does not have to be a material handling specialist.

**Material Handling Training:** Proper training enables supervisors and specialists to obtain more know-how to improve their own performance. In most cases, participation in training programs is voluntary. The training is usually of the round-table discussion type under the guidance of a suitable leader. It is well to suggest that each man undertake an actual project in his department. He should be encouraged to be active in technical societies and attend conferences specializing in material handling.

### Forms Help to Define and Compare

To enable a careful analysis of a material handling problem, forms are helpful—not only to define the problem but also to make up a comparison of how a project is now handled and what can be done to improve the situation.

The materials and conditions under which they are moved should be considered. The complete oper-

ational history of a material, its environment and its route during the manufacturing process should be reviewed. After a thorough outline of the problem, the next logical step is to analyze its cost. This may require considerable study in the plant on a time study basis, or an intimate knowledge of the process may enable a supervisor to evaluate the steps taken. At times the information contained in such a review is so complete that someone who has not seen the project is in a position to suggest improvement by studying the data alone.

A typical form covering these items is illustrated. It enables a comparison of present materials handling costs with the proposed change. This guide is most helpful in bringing out details that could have an important bearing on a final decision. The normal method of evaluating labor is to use a flat labor rate times the allowed or actual time required.

Here is an outline on how one manufacturer purchased 15 fork trucks to save \$57,000 yearly:

(1) **Before:** Bagged materials were brought to the warehouse on trailer trains and platform trucks. Two laborers worked full time piling the bags in storage. Work was slow and poor utilization of storage space was evident. **Now:** Fork trucks handle palletized loads. The result includes the release of two full time men to other work, and a direct labor saving of \$12,000 annually.

(2) **Before:** Finished products were packed in small cartons and manually loaded on trailer trains. The trailer carried the cartons to the shipping area for storage until a truck shipment was arranged. **Now:** Finished products are packed in large special containers, hauled by walkie-type truck to a roller conveyor at the shipping point for load accumulation. The same fork truck is used to load the carrier. Direct labor saving is \$12,000.

(3) **Before:** Lumber was received in rail cars, manually moved from the cars, sorted and stacked piece by piece. **Now:** Lumber is removed from the car, made up into unit piles, strapped, and then handled by fork truck. Direct labor saving—\$17,000.

(4) **Before:** Scrap was placed in trash cans. The filled cans were lifted by overhead crane to a trailer train. Two men were employed to load the train and empty the cans into rail cars. **Now:** Self-loading hoppers and a fork truck with its operator do the complete job at a saving of \$9,000 a year.

(Continued on page 133)

COMPARISONS of material handling costs are made with the help of the forms shown on the opposite page. That at the top is printed on one side of a sheet 22½ inches wide, 11 inches high. Height may, of course, be varied to suit requirements of individual plants.

The two remaining forms, printed back-to-back on

a single 8½x11 sheet, provide a quickly-available summary which is helpful in highlighting details that may have an important bearing on a final decision.

All forms are intended to be used for analysis, providing a cross-index of information valuable to engineers and management.



**YARDS  
...CAN LOOK...  
LIKE THIS**

## Good Planning Makes the Difference

**O**UTWARD appearances may be deceiving . . . but not when you are looking at an outdoor storage area. The first glimpse of a plant-yard is usually sufficient to make possible a reasonably accurate guess of the speed of handling, efficiency of storage and degree of safety which prevails.

A muddy, deeply rutted area, for instance, is a good indication that handling devices such as industrial trucks, cranes, etc., are not able to operate at top speeds or efficiencies. Often, they are not as safe to operate under such conditions as they should be. Poor housekeeping in the yard (materials stored haphazardly, without any apparent plan, or stacked poorly) is another sign of low efficiency.

Surprisingly enough, many companies which have spent large sums to bring indoor handling and plant layout up to latest standards seem to forget that handling in the yard can be expensive too. A well planned outdoor storage area can provide an excellent place for temporary storage of many types of raw materials which are not damaged by the weather. In many industries, finished products waiting for shipment may also be stored outdoors at low cost.

A fine example of taking full advantage of the yard is found at Joy Manufacturing Co., Franklin, Pa. Two yards, located more than a mile apart, are involved in the company's operations. Through good planning,

Joy has been able to coordinate the functions of both yards so that they act almost as one unit. Roadways in both are laid-out neatly with all materials easily reached. Roadways are wide enough and smooth enough for safe, top-speed handling. Storage has been planned so that all similar materials are stored closely together. In every way, Joy has taken full advantage of a potentially low cost warehousing facility . . . the yard.

Efficiency in the yard was not always the case at Joy, however. Before some major changes were made, problems of outdoor storage affected not only the company's warehousing costs, but also its production. One major difficulty lay in the fact that the two yard areas were so far apart. In the past, a single tire-mounted mobile crane was used for handling operations at both the No. 1 and No. 2 plants. A theoretical work-schedule was set-up, whereby the crane would be at each yard for a pre-determined part of each day. The schedule was practically impossible to maintain, however. Let us suppose that the crane is operating at yard No. 1 as scheduled. A situation at plant No. 2 arises whereby a particular item or quantity of material stored in yard No. 2 is required immediately. In the past, work at yard No. 1 had to be interrupted, the crane had to travel over the road as quickly as

*(Continued on page 89)*

OR  
LIKE  
THIS



CRAWLER MOUNTED CRANE operating on paved yard neatly stacks shuttle car bodies weighing approximately 6000 lb. each. Sling simplifies handling.



CONCRETE REPLACES MUD at Joy's No. 2 yard. Before paving, confusion prevailed (see photo in upper left hand corner of opposite page). Now, all material is neatly stored. In addition, handling over smooth, wide roadways has become safe and fast.

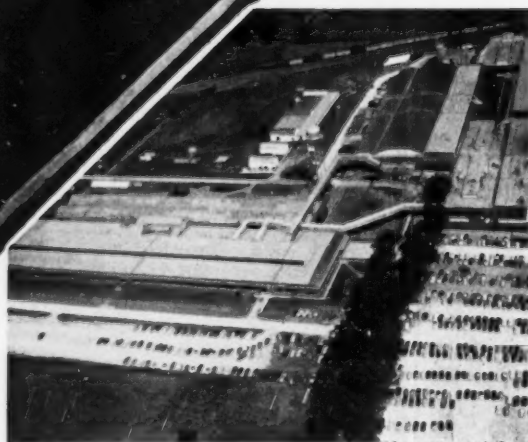


TIRE MOUNTED CRANE is used at Plant No. 2 of Joy Mfg. Co. Here, it picks up tubing and bar-stock from racks and loads up a trailer. All storage of this material is here in the yard. For use, lengths are cut from pieces on trailer, then material is returned to storage.



## SCALE MODELS . . .

# Toys or Useful



SCALE MODEL, part of which is shown above, has been used by Admiral Corp. for all planning since it first took over production facilities of Midwest Mfg. Corp. The plant is now operated as an Admiral subsidiary, is shown as it appears today in the aerial view.

**S**CALE models, complete in every detail, are being used more and more in the planning of new buildings, or additions, and in revising present facilities to make them more efficient. When large sums are spent on such models, it is not unusual to hear the query, "Is this money well spent, or is it merely being used to buy a toy for the enjoyment of our engineers?"

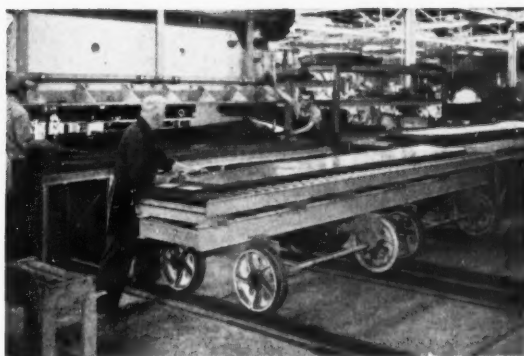
The truth is that models, when used correctly, can help the plant layout engineer to decide basic principles of layout quickly. They will help him to determine whether arrangement of equipment will be according to process (equipment of like nature will be grouped in one department) or by product (where necessary equipment for all operations on a particular product are brought together regardless of variety and types).

Models can relieve costly engineering personnel of petty side details and of the drawing and re-drawing of layouts. They provide valuable assistance to both the engineer and his superiors when discussions are held concerning proposed designs. Little is left to the imagination, and errors can be spotted quickly.

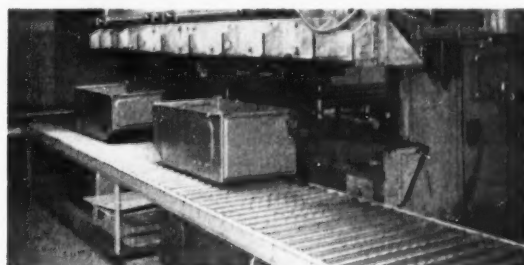
One of the most complete and most used models to be found anywhere is at Midwest Mfg. Corp., a sub-



Admiral Corp. at its Midwest Mfg. Corp. subsidiary, proved the value of scale models when it converted a kitchen cabinet plant into a highly efficient facility for the manufacture of refrigerators and ranges.



ROLLER CONVEYOR SECTION mounted on wheels provides an easy method for removing steel sheets from shear and for moving it onto one of three other conveyors. One conveyor leads to a Yoder Roll machine, and the other two act as storage conveyors.



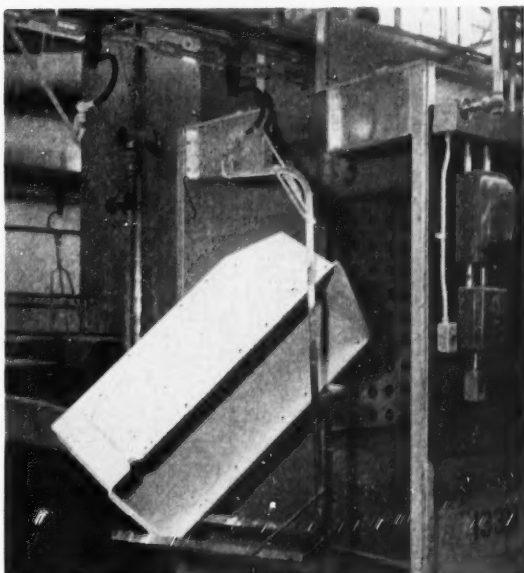
ROLLER CONVEYOR passes directly in front of brake press which forms flanges on liners for Admiral Refrigerators. Note this has virtually eliminated all handling.

## Planning Aids?

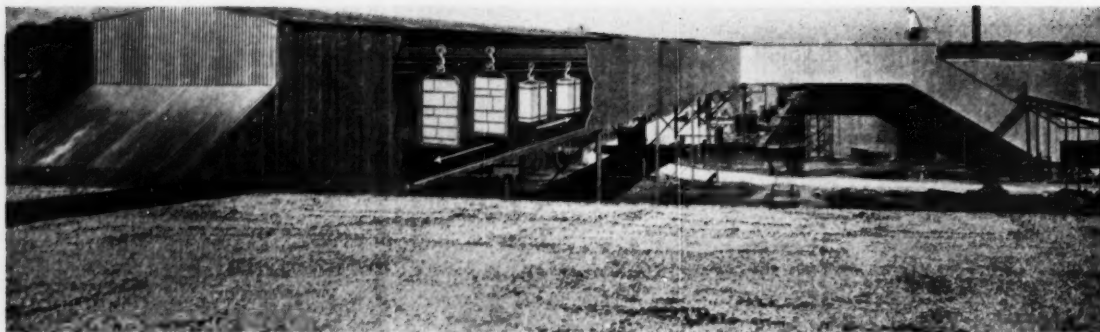
subsidiary of Admiral Corp. in Galesburg, Illinois. The plant was formerly a kitchen cabinet manufacturing facility, but is now used for the production of all Admiral refrigerators and electric ranges. Buildings cover a 740,000 square foot area, mainly of one-story brick construction. They are served by eight railroad spurs, 15 depressed truck-docks and 35 loading and unloading doors. In the plant are almost six miles of overhead conveyors, an interplant bridge conveyor, 25 powered industrial trucks, 18 hand lift trucks, a 7½ ton overhead bridge crane, one 10 ton bridge crane and two jib cranes. The operation of all this equipment was studied and planned-for on the company's scale model. Long before any changeover was made from the old to the new products, results of proposed changes were studied on the model.

During the formative and constructive years following World War II, the plant layout department, with the model in an important role, was the focal hub of the entire plant. Here, executives and engineers gathered to discuss plans and to work out problems long before actual construction was started. Now, whenever changes are contemplated, they are first worked out on

(More on next page)



SPECIAL CARRIER was designed by Admiral engineers to carry refrigerator liners which have been dipped in ground coat for porcelaining. Note that method in which liners are supported permits even dripping of liquid and eliminates possibility of build-up at any point. Liners remain on carriers during firing.



INTERPLANT CONVEYOR connects buildings of Admiral's refrigerator-range-freezer plant in Galesburg,

Illinois. In the foreground is a new range plant, and at far right can be seen the main refrigerator plant.

## SCALE MODELS

*Continued*

the model, and then transferred to blueprint form and, finally, actually constructed.

It would be impossible to even estimate the savings in dollars which have resulted from the use of the model at Admiral. It is known, however, that several errors which would have cost thousands of dollars each to rectify, were discovered in early studies of the mock-up. . . . for instance, a matter as apparently simple as the positioning of presses in the press room. It was discovered that the arrangement originally decided upon resulted in inefficient handling and that maximum production rate would be lower than desired. Making changes to the best arrangement on the model

was simple and cost virtually nothing. To have made the same changes after the presses had been installed, with expensive reinforced concrete pits, would have been prohibitively expensive. As an alternative, it might have been necessary to use presses in the less desirable arrangement with either high-cost or inefficient handling with low production rates.

Even the planning of truck docks was helped by the model. Scale model trucks and trailers were constructed and actually maneuvered about in the proposed truck dock area, in the same way a driver would be expected to jockey his vehicle in actual practice. As a

*(Continued on page 149)*



SLAT CONVEYOR for assembly of refrigerator cabinets has special padded supports which permit units to be placed on their backs. Skids attached at this point will serve as bases for shipping containers later.

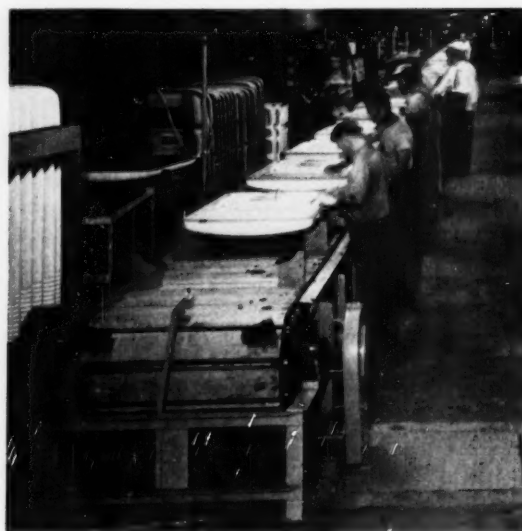
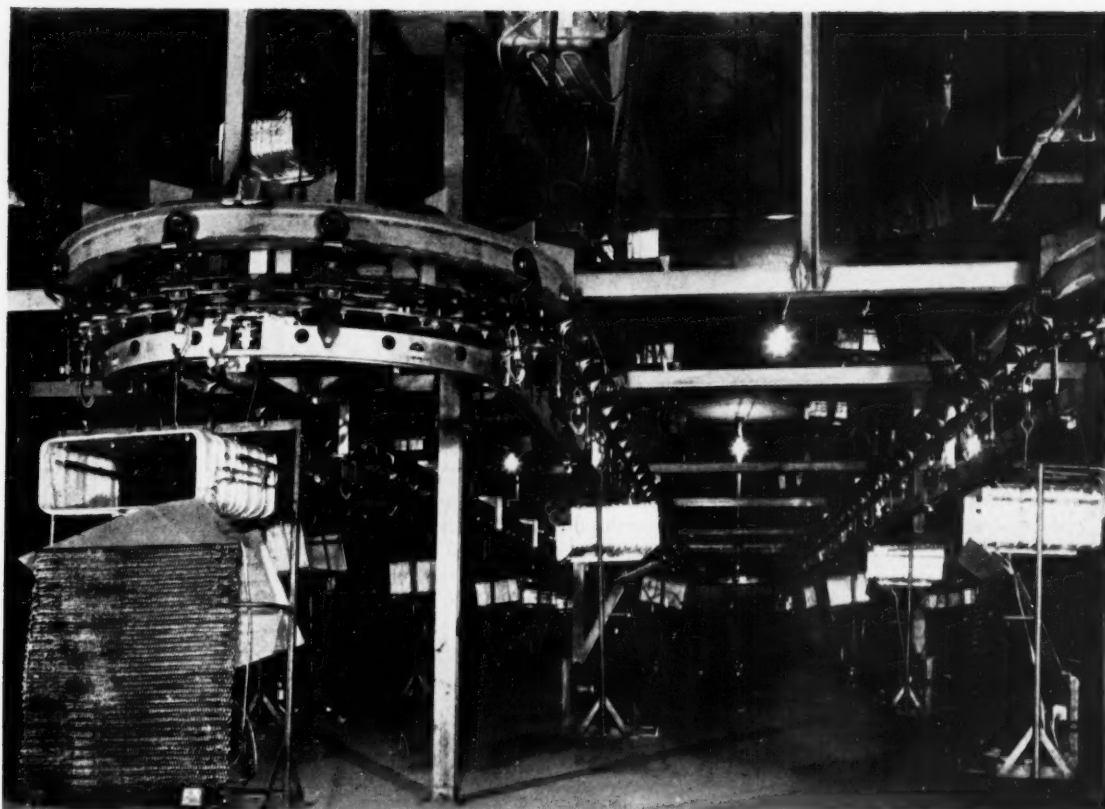
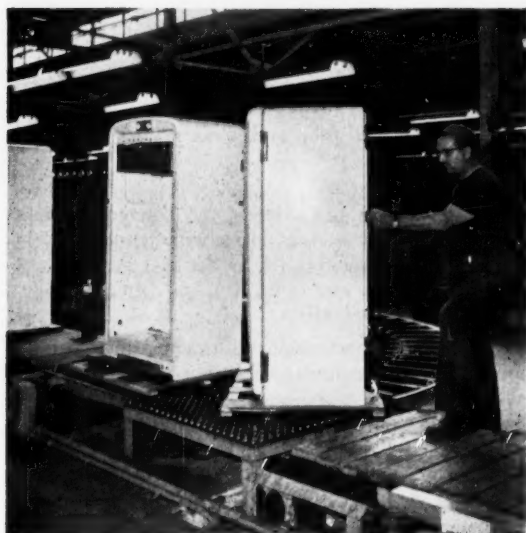


TABLE-HEIGHT SLAT CONVEYOR also has padded supports, these to fit door panels. There is one door assembly line on each side of cabinet assembly lines. Note the castered racks which hold extra door panels.

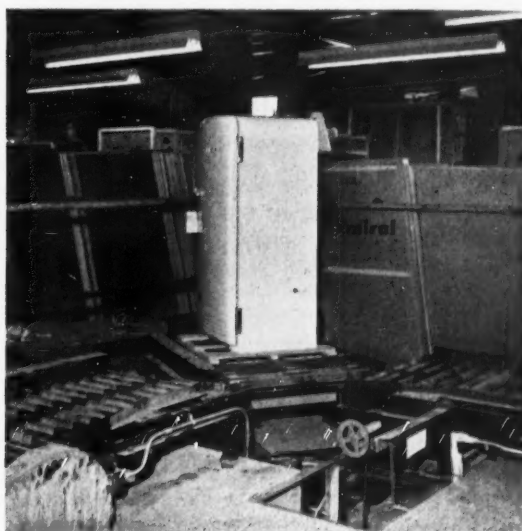


**OVERHEAD CONVEYOR** running in series of loops provides a test area for refrigeration units which Admiral receives completely assembled. During 2½ to

three hour period on the conveyor, units are subjected to a series of leak, noise and performance tests. They travel to assembly area via interplant conveyor, left.



**BALL TRANSFER** at junction of two cabinet assembly lines. The lines are split into two identical operations to make it possible to do a great number of time-consuming tasks without stretching out the assembly line.



**TURN MECHANISM** moves finished refrigerators around a 90-degree turn on the way to the crating area. Note that support blocks have been bolted to the back for protection from shifting during shipment.

Interest in liquid petroleum-gas as fuel  
for industrial vehicles is growing. Here's a  
"progress report" from a firm where . . .

# LP-Gas Conversion

## Saves \$300 Per Fork Truck

**S**UBSTANTIAL savings have been returned in less than seven months at a firm which is converting its gasoline-powered industrial trucks so that they will burn LP-Gas.

In July, 1953 Korhumel Steel and Aluminum Co., Evanston, Ill., modified one of its gasoline-powered fork lift trucks so that it could use liquified petroleum gas. Since then, five other Korhumel lift trucks have been similarly altered. The company spent \$235 for each changeover, a total of \$1410. Conversions were made by a Chicago firm specializing in this work. A truck was tied up for only eight hours.

At the beginning of this past January—less than seven months after the first conversion—Plant Superintendent Mark A. Mundy reported. "LP-Gas has saved us at least \$1,800 in reduced maintenance and repair bills."

The six lift trucks are fueled with propane which, with butane, makes up what is commonly known as LP-Gas, or bottled gas. It is a cousin of natural gas, from which part of the U. S. supply comes. The rest is produced as a by-product in oil refining operations. Butane, because it won't vaporize at temperatures lower than about 31 degrees F., can't be used for internal combustion engines in northern climates.

The converted trucks are part of a fleet of 16 used in Korhumel's 180,000 square-foot warehouse. Within the next year or so, all 16 will be converted to LP-Gas, according to present plans.

The warehouse, built in 1948, holds some 15 million pounds of steel, aluminum, and phosphor bronze, and employs from 100 to 200 men. The inventory, valued at about \$3.5 million, is stored mainly on skids, which are stacked vertically to a height of about 12 feet. Much of the lift truck movement takes place between the skid stacks and machines which slit or shear the metal.

Superintendent Mundy estimates that the cost of maintaining and repairing the six propane-powered lift trucks is now about 50 percent less than when they were fueled with gasoline.

"The valves had to be ground every 1,500 to 2,000 hours of operation," he explained. "But now, with propane, the valves last more than twice as long."

The reason for this superior performance, Mundy added, is that propane is about the cleanest motor fuel available. It leaves on cylinder walls a negligible deposit which contains no varnish and will never



CONVERSION of fork truck includes addition of LP-Gas tank (mounted behind driver's seat), with fittings, designed for 250 psi., and underwriters approved.

produce a carbon pile. Hence, the danger of sticky valves and smoky motors is virtually eliminated, he reported. Overall engine life is doubled at least.

### Complete Vaporization

Propane, unlike gasoline, vaporizes completely. No liquid enters the cylinders. Hence, the oil coating the cylinder walls is not diluted. Also, no liquid works past piston rings to dilute oil in the crankcase.

The cleanliness of propane, plus the fact that it vaporizes completely, has produced substantial decreases in the amount of oil consumed by the firm's propane-powered lift trucks. When they were gasoline-powered, the trucks—operated 24 hours a day, five days a week—usually received an oil change once a week. Now, oil is changed no oftener than once a month, and usually the gap is even greater.



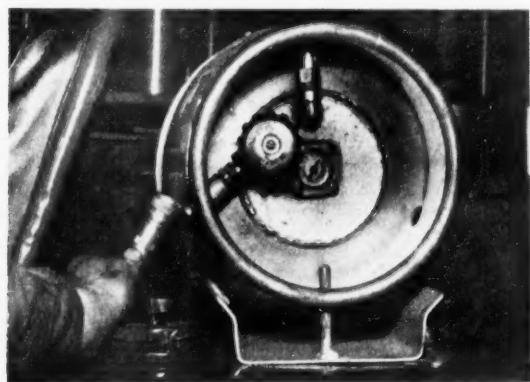
With gasoline, oil filters had to be replaced on an average of every two weeks. Now, filters last an average of three months.

### Economies of Conversion

The superintendent feels that one of the big economies of the conversion lies in the fact that a given amount of work consumes less propane than gasoline. Studies before the change-over showed that one lift truck was consuming 70 gallons of gasoline a month. The same truck, doing the same work, later used between 45 and 49 gallons of propane a month. Another lift-truck was checked for hourly fuel consumption. It used 1.7 gallons of gasoline an hour. After the change it was using 1.3 gallons of propane per hour.

This improved performance is based primarily on the higher octane rating of propane. Propane is rated at 100 to 125 octane, whereas the gasoline the firm has been using for the trucks was 60 to 70 octane.

This higher octane rating is sufficient to overcome the fact that propane produces about 24 percent fewer



**REFUELING** with LP-Gas takes only few minutes. Hose, left, leading to engine, is uncoupled, hooked into new tank, and tank shut-off valve (knob shown) is turned on.

BTU's per gallon than gasoline. This would normally make the LP-Gas a less-efficient fuel, but the higher octane rating produces a more volatile fuel, which, because of its ability to vaporize, actually does more work per gallon than gasoline. Also, the greater volatility of propane, plus its cleanliness, reduces the time spent in starting the lift trucks when they have been out of use for several hours.

Each of the six propane-powered lift trucks is fitted with an eight-gallon tank mounted on its side behind the driver's seat. This holds enough fuel to last, normally, for 24 hours. Tanks are filled at the bulk plant of an LP-Gas distributor a few blocks from the Korhumel warehouse. To provide a constant supply of propane at the plant, Korhumel has eighteen 8-gallon tanks. Filled extra tanks are kept in the repair shop, easily accessible from any point in the warehouse.

Fuel supplies can be replenished in a few minutes. The change-over involves uncoupling from the exhausted tank to a hose which leads into the engine, hooking this hose up to the new tank, and turning on the tank shut-off valve.

At present, Korhumel is paying 20 cents a gallon for the propane—about the same as the price for the gasoline formerly used. But within the next year the firm hopes to lower the cost to about eight cents a gallon.

Right now, tanks must be filled at the distributor's loading station because propane must be kept under pressure, in liquid form, until it is used—pumps and other special equipment are required during filling. Within a year, though, Korhumel expects to build its own loading station, at a cost of \$1,000 to \$1,200, to permit delivery in tank-car (10,000 gallon) quantities. This bulk shipment will reduce the price of propane to eight cents a gallon.

A railroad siding and a storage tank for bulk delivery are already available. The tank, with 30,000-gallon capacity, presently holds propane which heats the firm's annealing furnaces. When the loading station is built, it will be possible to use gas from this tank for the lift trucks as well.

### Hazards Avoided

The propane conversion program was launched to get rid of two potentially hazardous situations. One involved gasoline that was spilled occasionally, by careless workers, during refueling. Conventional gasoline pumps were used. If this fuel were to be ignited, fumes would carry flames inside the open lift truck tank, causing extensive injury and property damage.

Although propane is theoretically more of a fire hazard than gasoline, the danger is actually less, according to Mundy. The reason lies in the fact that the propane is under pressure until it is used in the engine cylinder. If the tank or hose connecting it to the engine spring leaks, fuel will come out with enough force to prevent oxygen from getting inside. As a result, although propane outside the tank could ignite, the flame would virtually never reach the liquid inside.

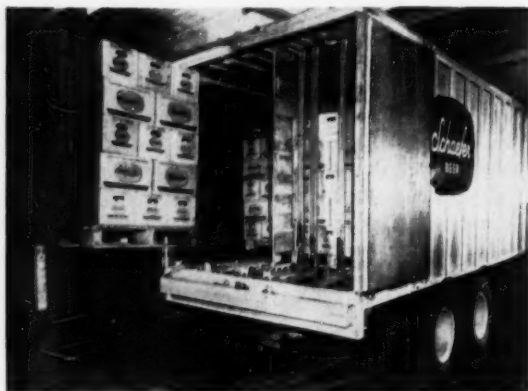
Also, truck drivers sometimes failed to watch their gasoline gauges closely. As a result, vehicles occasionally ran out of fuel on the job. When this happened, operations of another truck had to be halted while it pushed the empty unit to the pump.

Since propane is in a portable tank, the truck which runs out of fuel on the job can be filled on the spot, without tying up other equipment. These troubles still exist, Mundy reports, but the hazard has been much decreased.

### Recommended Reading

For background, technical and installation information, see the article in *FLOW* for September, 1953, titled, "Properly Used, LP-Gas Can Power Your Industrial Trucks".

## COST CUTTING IDEAS . . .



### A PALLET LOAD A MINUTE

Palletization of the F. & M. Schaefer Brewing Company cut the number of delivery trucks needed by 15 percent, and resulted in the development of new route trucks and trailers. The new truck has two different floor levels, which have speeded up the loading process 23 percent and resulted in faster manual delivery and pick-up. The new trailer is equipped with two skate-wheel conveyors which run along the floor from the rear to the front on either side. The pallet load is deposited inside the trailer, then pushed further in by each succeeding load, until both rows are filled. A plywood divider separates the two rows. Full or partial loads are locked securely in place with two adjustable steel posts, thus preventing load shifting.

### TAKE YOUR PICK, SIR!

A novel idea, which could be incorporated in many manufacturing or warehousing plants, has been developed by the A. O. Smith Corporation. This is a circular conveyor. Termed a "Lazy Susan", the conveyor contains various loads of raw materials required for electrode coating mixes. A fork truck operator selects pallet loads from the warehouse and places them on the conveyor. As the materials are needed, they are taken from the revolving table, weighed and mixed. There is no lost time element, as sufficient ingredients are always at hand for the mixer, and the fork truck operator is free for other duties. Maximum materials are thus handled by this firm at a minimum cost.



### 66 PERCENT SAVINGS PER CONTAINER

A change in the boxing method employed at the Carboloy Department of General Electric Company resulted in a savings of 66 percent per container. The most generally used new cardboard box, measuring 14 x 10 x 8 inches, is eight pounds lighter than the old box, and serves equally as well as a "message carrier". The new containers are four ply thick and have die cut slots on two opposite sides for easy freight handling. Advantages have also accrued to the customer, in the form of lower shipping costs. One New Jersey firm received a typical order of 129 cartons. The net savings compiled on this single shipment were \$59.00. Photo depicts former and present style of box.

## **COST CUTTING IDEAS . . .**

### **INITIAL COST REALIZED IN TWO WEEKS**

A bottle neck was eliminated on this manufacturer's conveyor line, through the simple installation of two air staplers. Formerly four men were required to do the job. The manufactured product came down the assembly line on conveyors, but there was a constant hold-up along the package line. Two pneumatically operated staplers were purchased at a cost of \$150.00 each. The results were: 1. A packaging process handled by two men, as opposed to four; 2. Increased production through elimination of a bottle-neck; 3. A neat, uniform package; 4. Tremendously cut costs. Original cost was realized in less than two weeks.

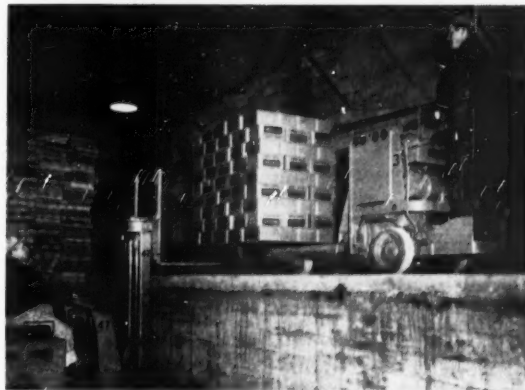


### **WASTE ADDS UP TO PROFITS**

An American tobacco warehouse needed a sweeper to clean its floors. The old manual push-broom method was costly and inefficient. A rider type, gasoline operated sweeper was purchased. This permitted the job to be done by one man and resulted in a thorough clean-up job. This factor alone proved profitable. However, the real profits came from a brush attachment which goes ahead of the sweeping machine. Here, large tobacco leaves, formerly swept out, are gathered and used in by-products which find a profitable market. As a result of this small investment for capital equipment, the manufacturer makes two profits from an operation which had represented overhead expense.

### **SO YOU CAN'T BUILD THIS YEAR**

Even though your warehouse is old, involving steep ramps and long hauls, you can still cut costs. Shown here is an operation employed by a Chicago packing plant. The company saves time, and thus money, and has a continuous flow of merchandise, all at a very low handling cost. Skids are loaded from trailer trucks at the dock. There they are picked up by an electric rider type skid truck and transported down a long, narrow dock, where they are deposited. An electric fork truck on a lower level, picks up the unitized loads and stacks them as high as permissible. Travel time and wear and tear on equipment are minimized, since the distance and incline factors have been eliminated.





GREAT DISTANCES are covered by straddle trucks carrying large loads between rail sidings and yards and in making direct deliveries to customers.

## Handling for Long Hauls...Heavy Hauls

**L**ATEST methods for continuous movement of materials among scattered stations via various types of conveyors were discussed in FLOW's September issue (*"Continuous Handling Between Buildings"*).

This extension of the subject deals with three major types of material movement, all of which are intermittent in nature, as follows:

(1) Coordination of powered and manual handling vehicles in the loading, unloading, assembly and operation of plant "trains".

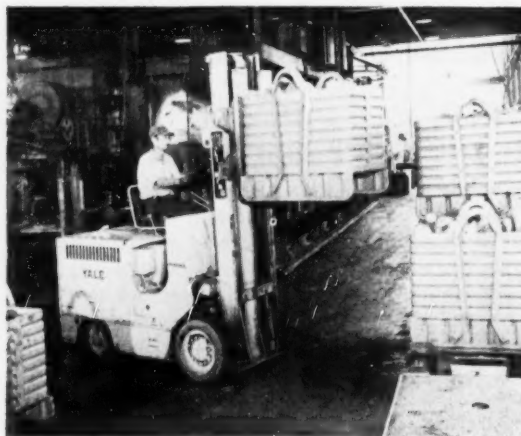
(2) Movement of great weights over long and medium distances.

(3) Transport of large, individual unit loads over great distances.

Following the style of the first section of the series, examples of operations described and illustrated are intended to show plant applications which other firms may find adaptable to their operations. It will easily be recognized that the common denominator for efficiency in each is maximum use of the unit load.



LONG AND HEAVY loads, such as these steel channels in the yard of International Harvester, can be handled by side-loading fork trucks, carried at highway speeds.



THREE PHASES OF INTEGRATED HANDLING . . . at Caterpillar where (1) Skidboxes are carried by fork truck from production lines to train assembly areas . . .





**HAULING** as many as 25 trailers at one time, tractor towed train at General Electric plant carries large electrical components between distant departments.

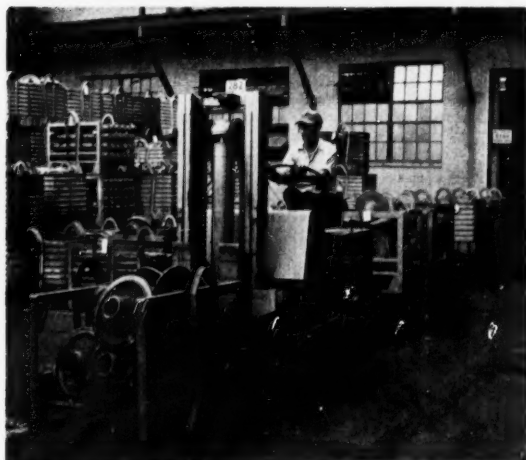
### **Trailer Trains Highly Versatile**

It has been rather widely accepted that trains of floor trucks towed by tractors, smaller "tugs", mobile cranes, or fork trucks are efficiently employed when travel distances are much in excess of 200 feet. This is, of course, subject to modification with various weights of material. If, for example a full unit load were to exceed the capacity of a company's fork

truck, it might well be handled with two fork trucks or on one or more high capacity trailers—pushed or pulled by an available fork truck.

Trailer trains are frequently operated on regularly scheduled runs, with fixed delivery and pick-up times. They are also employed so that individual floor trucks are loaded with parts or assemblies—occasionally in

*(More on next page)*



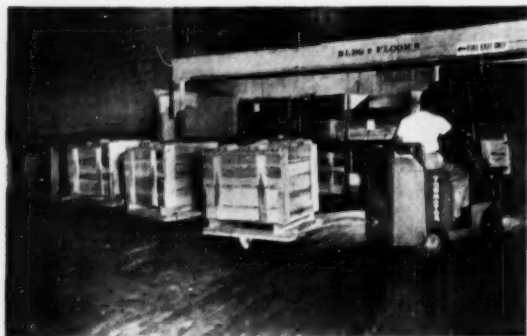
(2) Fork truck-trailer, one-man gang systems haul materials to places intra-plant rail train doesn't reach . . .



(3) Parts storage is unitized in yard bays where fork trucks stack and handle boxes to and from trains.

## Handling for Long and Heavy Hauls . . . cont'd

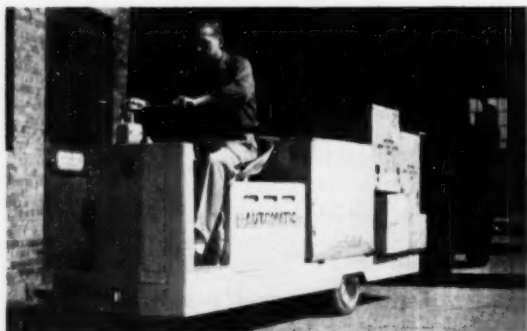
floor or overhead drag conveyor lines—during production and then towed to other locations to again be incorporated into conveyORIZED operations for further work.



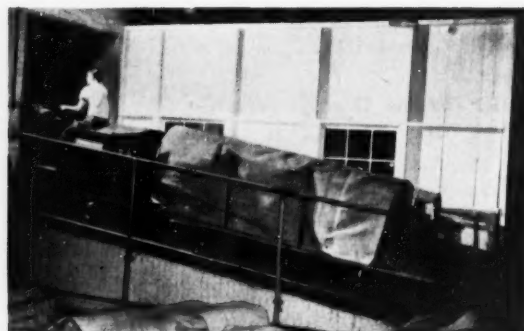
**TRAIN OF DOLLIES** towed by fork truck (with load on forks) cut handling costs 50 percent, increased volume handled 300 percent at Bigelow-Sanford.



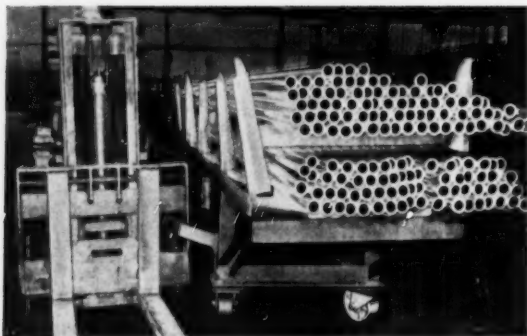
**ON THE FARM**, 120-box sled load of fruit, brought from orchard by straddle truck, will be handled by fork truck into packing plant and to cold storage conveyor.



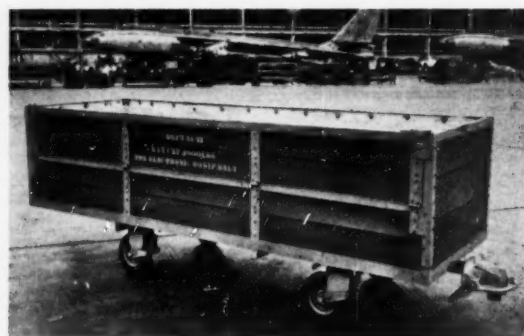
**ODD SHIPMENTS** transferred distances to 300 yards from truck ramp by 2000 lb. platform truck. Side & rear stake pockets allow use of racks for irregular loads.



**FOUR ROLLS** of seamless carpet weighing 2300 lbs. ride on trailer towed by tractor between departments of New England mill. Some round trips run 1000 ft.



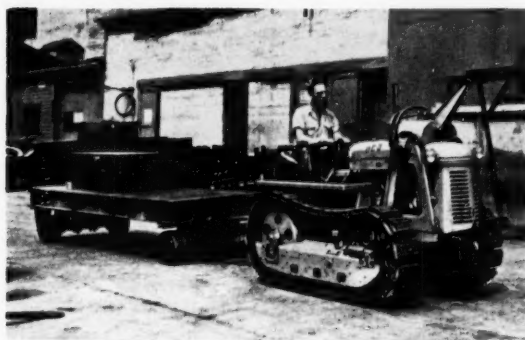
**SPECIAL TRANSFER CAR** has bracket for side towing by fork truck to move 10,800-lb. loads of brass tube about 75 ft. without obscuring operator's vision.



**SAFE TRANSPORT** of delicate instruments to widely scattered stations provided by 10 ft. long, rubber lined truck with spring mounted casters at Lockheed Aircraft.

have paid off especially well when made part of an integrated plant-wide system. Handling employed at the Peoria Plant of Caterpillar Tractor Co. illustrates a successful integration technique.

Located on more than 400 acres, the company uses a large fleet of transportation equipment—a tractor-towed intra-plant railway system, semi truck and trailer units, pickup trucks, fork trucks, and power driven and mechanical hand trucks.

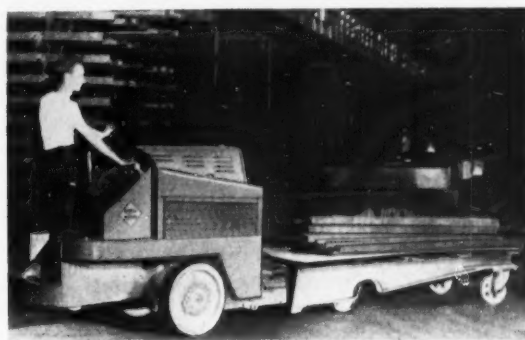


**HEAVY-DUTY** trailer with 6450-lb. die block hauled by tractor having special drawbar and rubber pads. Dozer blade can be attached to mounting bracket.

Some 400 trailer-type cars haul material on the plant's six to seven miles of "railroad". These carry material of all types and kinds—parts, engines, castings, foundry sand, scrap, lumber, etc.

Material delivered to the production lines is picked up by manually operated trucks, which shunt it down aisles to machines. (These trucks also cart material from unloading docks to receiving areas.)

*(More on next page)*



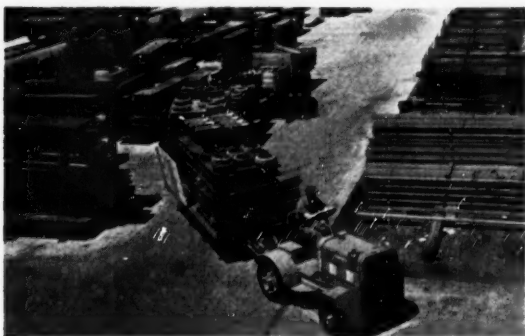
**STANDARD PLATFORM TRUCK** and dolly handle loads 18 ft. long, weighing 10,000 lb., at Hercules Steel. With casters at outboard end, dolly supports weight.



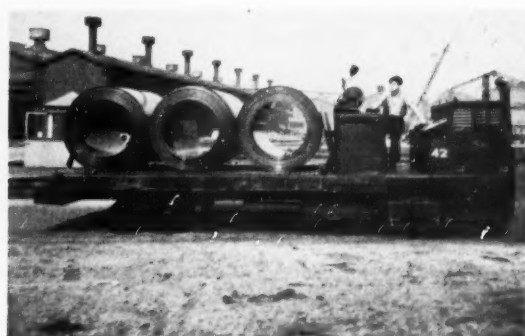
**WALKIE-PULLED** trailer train carries miscellaneous merchandise between buildings. Pallet loads are handled by fork trucks in buildings.



**IN COTTON INDUSTRY**, considerable use is made of trailer trains for hauling great numbers of bales for distances sometimes measured in miles.



**LARGE LOADS** are carried by pneumatic-tired trailer-tractor train which brings materials from yard storage directly to production lines of Midwest manufacturer.



**CONVEYOR TRUCK** of 54,000 lb. capacity carries coils 1000 ft. Truck conveyor bed loads strip steel from pickling line conveyor. Ram trucks unload coils at mill.

## Handling for Long and Heavy Hauls . . . Cont'd



LIFT FORKS on tractor handle heavy steel girders, other materials for prefab housing construction from plant to yard storage at Harnischfeger plant.



PICK-UP trucks, with capacity to  $\frac{1}{2}$  ton, provide quick transportation inside or outside plants; battery operated at claimed cost of  $\frac{1}{5}$  cent per ton-mile.



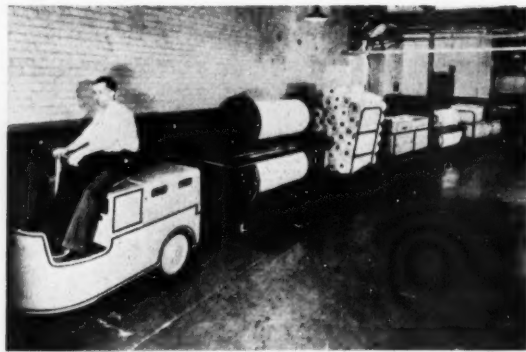
BOLSTER load of parts in skidboxes moved by straddle truck. Drums, crates, other bulky, heavy loads are economically handled for long distances by such trucks.

## Special Jobs Directed by Radio

Pickup trucks of  $1\frac{1}{2}$  ton capacity and semi trucks (20-foot trailers and tractors) handle the special pickup and delivery jobs. A number of these are equipped with mobile radio units to keep them in close contact with the dispatching office. They respond to emergency orders on short notice and, on plant-to-plant deliveries or outside pickups, they can radio their positions and approximate arrival times to alert receiving stations to stand by to receive loads.

A considerable part of the success of the Caterpillar transportation system is due to the standardization of stacking-type, steel skidboxes for parts. These are handled with fork trucks both inside and outside the plant—between production lines and trailers, to and from outside storage areas, to and from trailer cars. For areas the rail cars can't reach, tire-mounted trailer loads of these boxes, as well as portable racks, are towed by fork trucks. And at this plant, as in many others, the full capacity of the truck is utilized as a load is carried on the forks.

*(Continued on page 94)*

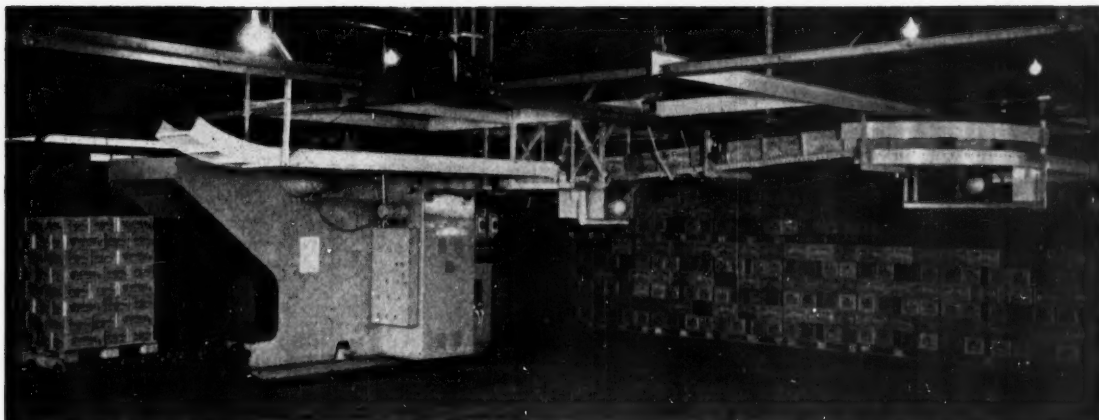


GREAT VARIETY of platform trucks handles all sorts of loads in train operating at Montreal Cotton. System reduced handling costs 37 percent for this firm.



HYDRAULIC unit on tractor, push-button controlled by operator, raises end of floor truck or semi-live skid for long hauls or handling unusually heavy loads.





**PALLET LOADER** and connecting conveyors are shown here. In this installation, converging section at extreme right transfers cartons from two accumulator lines to

single live-roller 90-degree curve and then to gravity and power conveyors leading into the loader. Elevated conveyors do not interfere with traffic in plant.

## Automatic Pallet Loaders: Another Step Toward Automation

**I**NDUSTRY'S trend to automation is exemplified by its increasing acceptance of the automatic pallet loader, a relatively new entrant in the material handling field.

Mass producers of more and more products are now giving serious thought to the economics of using these pallet loaders, thus bringing the push-button factory a step closer to reality. With electronically-controlled pallet loaders, industry can:

1. Mechanize completely its product flow;
2. Convey cartons and cases from manufacturing to storage areas at higher speeds and with almost no manual effort;
3. Load containers onto pallets in any number of stacking patterns;
4. Direct this high-speed activity with only periodic manual control.

### High Speed Operation

These machines can palletize 25 to 30 cartons or cases per minute for average conditions on multiple feed systems. However, they can palletize up to 35 cartons or cases per minute when operating with only one product.

Most packaged goods lend themselves to automatic palletization. All types of cartons, cases and other similar shipping containers can be handled. Even bagged goods, such as consumer-size "bales", may be pallet-

ized automatically provided they are rigid. However, non-rigid bags will jam the loader. Other items which cannot be handled are those whose nature causes excessive abrasive action and consequent damage to the conveyor system (bricks, cinder blocks, etc.).

Standard pallet loaders will handle pallets from 40 to 50 inches wide, and from 32 to 48 inches long. Most loaders now in use were designed for 3000-pound unit loads with a maximum of 1000 pounds per layer.

Although pallet loaders are capable of forming infinite numbers of different pallet patterns, most units are designed to provide up to 18 patterns—each governed by its individual pattern-forming cartridge. In actual practice, three or four cartridges may be considered normal. However, this total is determined by the number of pallet patterns desired.

Automatic pallet loaders are available with straight gravity discharge conveyors which normally hold three pallet loads. For selective and additional storage, a powered right-angle discharge conveyor may be used. This system permits fork truck pick-up of any accumulated load even if two-way pallets are used. Also, with this discharge conveyor, the number of automatically-accumulated pallets can be increased greatly.

Although the job a pallet loader does is complex and  
(More on next page)

## PALLET LOADERS

*Continued*

infinitely variable, operation and maintenance are relatively simple. Costs of electricity and air are only a few cents per hour. Maintenance and repair costs are comparable to those of any automatic equipment.

### Essential for High Volumes

More and more, manufacturers are coming to realize that pallet loaders are essential to their high-volume packaging operations. In fact, pallet loaders are the vital link in the mechanized product flow of modern plants which starts at receiving, continues through processing, packing, carton sealing (or case packing) and pallet loading, and ends at the warehouse or shipping platform.

With all of these operations mechanized for top efficiency, it is obvious that industry should now want to mechanize the pallet stacking operation.

Starting a pallet loader at the beginning of a shift is a simple operation. It requires only the push of a single button. A second push stops the unit. Lights on the machine's indicating panel reveal, at any instant, the stage of completion of each pallet load. To handle products from different or additional conveyor lines, the attendant merely changes the settings of the other push-button controls.

Here is how an automatic pallet loader actually operates:

Cartons or cases enter the machine on roller conveyors. As they pass through the feed belt, they are guided into proper alignment and spaced for optimum operation. Next, the cartons pass a photoelectric cell where they are counted, and the number is remembered by the control mechanism.

As each row of cartons is accumulated and posi-



**MAGAZINE** at rear of pallet loader holds stack of empty pallets, enough for at least 15 min. production, so truck can unload full ones, keep machines supplied.

tioned on the package conveyor, a ram moves forward and pushes them onto a "stripper plate." After loading, the ram returns to a retracted position and another row of cartons moves into position. Subsequent rows are accumulated and rammed in the same manner until a complete pallet layer has been formed on this plate.

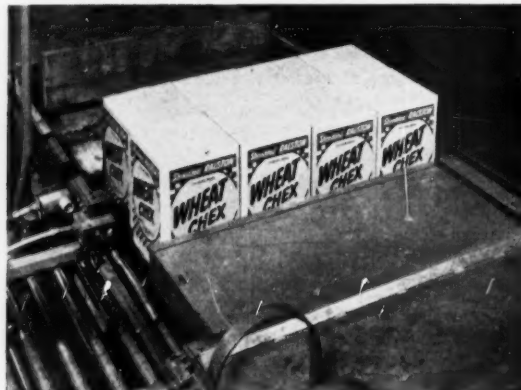
The stripper plate is then withdrawn, causing the layer of cartons to drop approximately one inch to the waiting pallet. The machine's internal elevator lowers the layer so the stripper plate can return. When layers are completed, the pallet load is discharged onto a storage conveyor prior to fork truck pick-up.

At the rear of each machine there is a pallet maga-

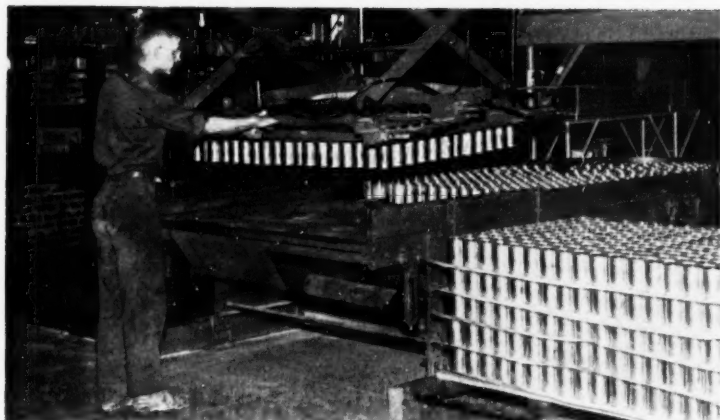
### HOW A PALLET LOADER OPERATES



**CARTONS** or cases enter the machine on roller conveyors. They are aligned and spaced on the feed belt, counted by photoelectric cell, and then . . .



**EACH ROW** is pushed onto a stripper plate by a ram which moves forward, as seen here. Subsequent rows are accumulated by a predetermined pattern until . . .



**DEPALLETIZER** reverses operation of pallet loader. It is shown here removing cans from a pallet, tier by tier. It deposits each tier onto a moving conveyor which transfers the cans to a converger. The converger delivers cans in single file.

zine which has a capacity sufficient for at least 15 minutes of production under normal operating conditions. Thus, one fork truck can easily unload full pallets, carry them to the warehouse for storage, and keep the magazines supplied.

#### **When Should Pallet Loaders Be Considered for Use?**

When should a manufacturer consider using one of these machines for his pallet loading operations? Obviously, there are plants where automatic machinery of this type would not be an economical investment. What, then, are the guide posts?

Generally, manufacturers whose manual pallet loading operations are less than eight to ten cases per minute should not consider the purchase of an automatic pallet loader. The same probably applies to higher-volume seasonal (six months) producers in the canning industry. On the other hand, pallet loaders can be money savers for high-volume producers whose production rates are more than 15 cases per minute.

However, the total cost of an installation will depend not only upon the number of loaders needed, but also upon such factors as: the number of conveyor lines that must be integrated into the system, the type of controls desired, the number of different commodities that must be handled, the speeds of associated packaging equipment, accessories desired, and others.

A typical cost analysis will do much to clarify the economies of these machines. One user, whose production was at the rate of only 15 cartons per minute, was able to save \$18,805 over the period of one year.

The savings represented a cost comparison between the company's annual cost of pallet loader operations and its former annual cost for manual palletizing. These figures were composites of such production and cost factors as labor, time, rate, volume, tonnage, depreciation, maintenance, insurance and other variables.

*FLOW thanks Lamson Corporation and Standard-Knapp, Division of Emhart Manufacturing Company, for their help in preparing the preceding article.*



**PATTERN LAYER** is formed and stripper plate is withdrawn. Note that layer has started to lower so that the operation can be repeated in order to form . . .



**COMPLETED PALLET LOAD**, being discharged from the machine. Fork truck will pick it up. Note next load (top of photo) already being formed.

#### THE PROBLEM:

To devise a fast, efficient system of mail delivery for 30 floors of this skyscraper.



#### THE SOLUTION:

A selective vertical conveyor which handles a million pieces of mail a month. The result is that . . .

## Special Delivery Is Routine For "Mechanical Mailman" Conveyor

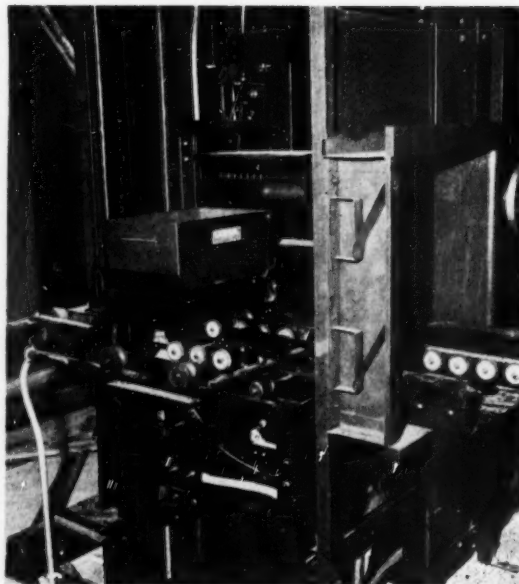
**H**OW to handle most efficiently, distribute and assemble approximately a million pieces of mail a month for 30 floors was a basic requirement in the planning of United States Steel Corporation's mail room in the new 525 Wm. Penn Place building in Pittsburgh.

This figure for the volume of mail evolved from an analysis of the traffic among the subsidiary companies and breaks down to one-third incoming, outgoing, and recirculating mail between departments and companies. Parcel Post and express parcels are included in this figure.

The design of the structure and the difficulties of handling the mail presented a serious problem for any system based on using the elevator facilities. A thorough study of methods available for distribution of the mail indicated that best results could be obtained by a selective vertical conveyor to service all United States Steel floors, from 9 through 40.

The conveyor employs a single chain, and means are provided to load and discharge automatically at any predetermined point. Carriers are attached to the chain at approximately 9-foot intervals which with a chain speed of 72 feet per minute, gives a normal traffic of eight carriers per minute past any floor.

Operations in the mail room, which occupies 2950



CARRIER is shown lifting tray from loading station, which is carried on grooved wheels. Tab fingers seen above tray set destination as carrier passes.





**MAILING ROOM** receives mail in trays which are discharged from the vertical chain conveyor onto two belt conveyors and then to a spiral storage conveyor which feeds, by gravity, the trays to a separating table. Here, outgoing mail and parcel post are separated from recirculating mail.

square feet of the 14th floor of the building, begin at 7:00 a.m. with the delivery of 30 to 50 No. 2 sacks of mail. At 7:00 a.m., a rough sorting of mail begins, followed by sorting by floor. A rigid schedule calls for mail delivery to individual floors every 30 minutes throughout the working day, beginning at 8:00 a.m.

The mail is sorted into plastic trays,  $15\frac{1}{8}$  by  $10\frac{5}{8}$  by 10 inches high, each carrying a maximum load of 30 pounds. The destination, or floor, is indicated on each tray—and the selective conveyor then goes to work.

A mailroom worker sets the dial for the floor to which the tray will be dispatched, and then moves it out onto the loading station. When an empty carrier on the constantly-moving chain approaches the loading station, the tray is automatically placed on the carrier, after which it travels up the conveyor, over the top and down to the selected floor. At the proper floor, the tray is picked off the vertical conveyor and deposited on a horizontal discharge conveyor.

If more than one tray is to be sent to the same floor, the dial setting does not have to be changed, since the tray will travel to the floor indicated by the dial. If a loaded carrier approaches the loading station, the tray will remain in place on the loading station until the next empty carrier approaches. Since this system is primarily used for distribution of mail and stationery from the 14th-floor mail room and stock room to all floors, and to recover mail from all floors for sorting and mailing, dials on the other floors are normally set to dispatch to the 14th floor. However, trays can be dispatched from any floor to any other floor.

A safety factor has been incorporated to prevent jam-ups in the event a station is unattended for a long period of time. After four trays have accumulated at an unloading station without removal from the discharge conveyor, the unloading station will not operate. The next tray will travel down around the bottom

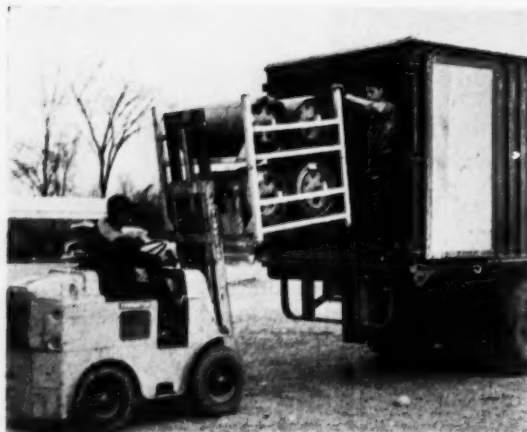
*(Continued on page 135)*



**LOADED TRAY** is dispatched from the mail room by attendant who sets the dial for any designated floor. Tray is automatically picked up by conveyor.



**DISPATCHED TRAYS** arrive at the floor to which they were directed. If more than four trays accumulate here, the unloading station will not operate.



**SAFE TRANSIT** is assured as rubber sheeting is carried in racks on which it is stored after processing. Material is suspended on spindles.

**H**IGHLY susceptible to damage, rubber sheeting is hard to handle under any normal conditions. But when it has to be transported safely and economically over great distances, stored and moved a number of times, the damage potential is very much increased.

To handle rolls of this material, Automotive Rubber Company uses a rather unusual rack, in which rolls are suspended off the floor on spindles. The firm's rubber mill is located in the Western part of Michigan, 150 miles from the closest processing plant. After the raw material is loaded into and accumulated

## Rolls Racked for Unitized Handling

in these stacking-type units at the mill, they are placed in highway trailers destined for either the Automotive Rubber Plant in Detroit or in Houston, Texas, 1500 miles distant.

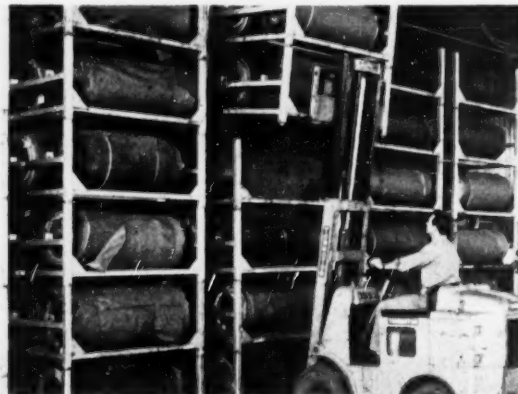
In Detroit or Houston, racks are unloaded, by fork truck, into the storage area and stacked six tiers high. As material is needed, it is moved to the cutting tables where the spools are unwound directly to the first production step.

When trucks return to the mill, they carry a load of racks containing empty cores or liners.

*Photos courtesy American Metal Products Co.*

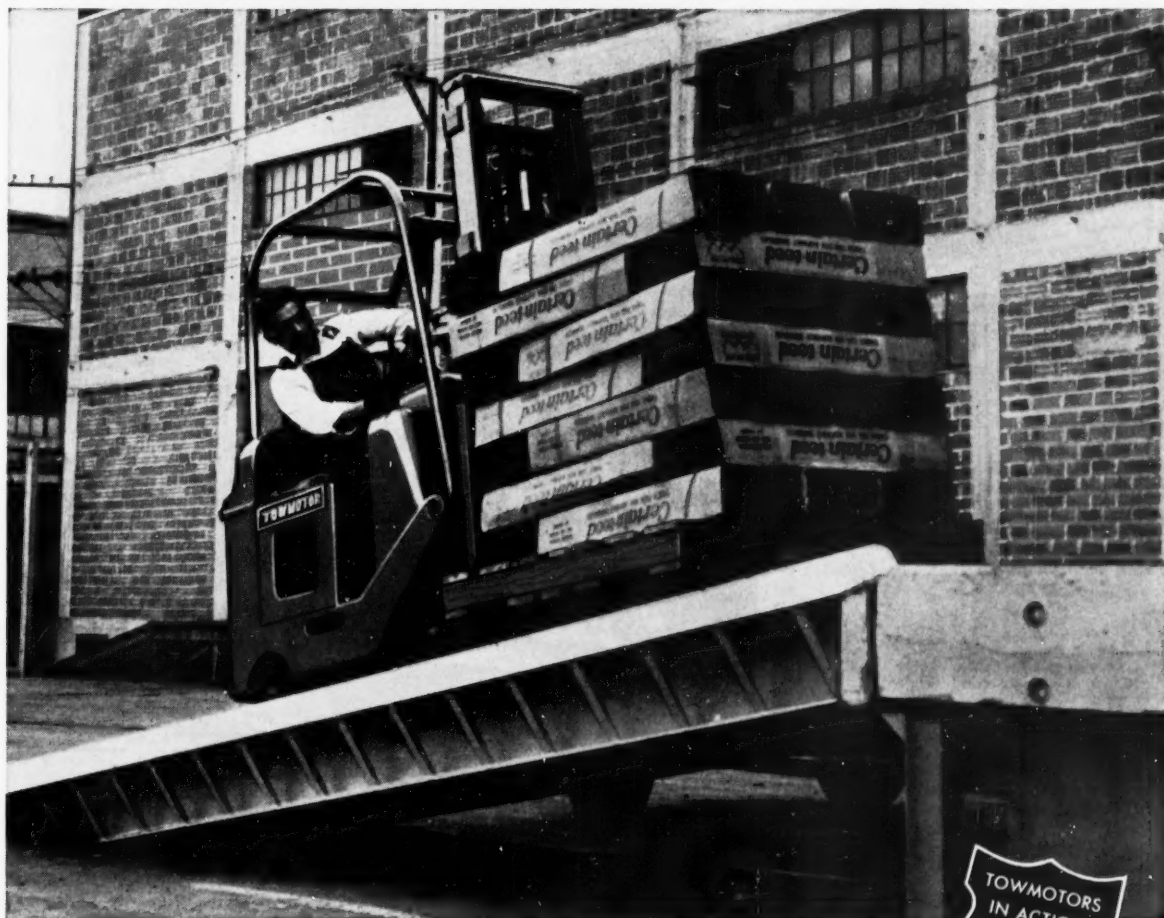


**FROM STORAGE** area, sheeting is delivered to cutting tables, as needed, in original unit loads. Empty cores are re-racked for return to mill.



**AFTER UNLOADING** racks from highway trailer in Detroit or Houston, fork truck carries them to plant storage areas where they are tiered six high.

# BIG PUSH FOR PROFITS



Up a steel ramp with a full load of roofing material at Alamo Iron Works, San Antonio, Texas.



**With production costs up** in every industry, it's *drive, drive, drive* every inch of the way to maintain profits. Many firms are doing it by slashing their materials handling costs with Towmotor **Mass Handling Equipment**. Towmotor Fork Lift Trucks speed production, stop manhour leakage, increase capacity. Join the big push for profits with Towmotor Equipment!

Write for "What Makes It Tick?," the inside story of Towmotor. Towmotor Corporation, Division 803, 1226 E. 152nd St., Cleveland 10, Ohio.

**TOWMOTOR**  
THE ONE-MAN-GANG

**FORK LIFT TRUCKS  
AND TRACTORS**

SINCE 1919

**TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE**

Circle No. 135 on Reader Service Card for more information

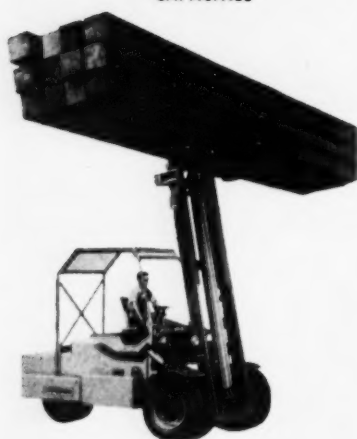
FLOW • MARCH, 1954

**IS YOUR  
STOCK or  
STORAGE AREA in**



**HEAVY-DUTY FORK  
LIFTRUK**

**5 - 7½ - 10 - 15 ton  
CAPACITIES**



You have your *width* and *depth* for storage and shipping areas — that's pretty much controlled — a systemized layout of stacking aisle and "unitizing" will improve efficiency — BUT —

Are you taking full advantage of that *Third Dimension* — HEIGHT?

A Silent Hoist LIFTRUK designed for heavy-duty capacity loads, will stack your materials, parts, finished products, etc., and add many feet of usable space above your normal stacking height. You can actually add acres to your warehouse, without adding a single foot of floor area! And the LIFTRUK will speed outloading at least 3 times as fast as "partload" or "lightload" methods. Write for convincing facts —

**SEND FOR FREE BULLETIN NO. 77**

SILENT HOIST also offers other heavy-duty Materials Handling Equipment... including LIFT-O-KRANE, a Combination Boom Crane and Fork Lift, with separate power winch... write us about

**LIFT-O-KRANE**

**SILENT HOIST & CRANE CO.**

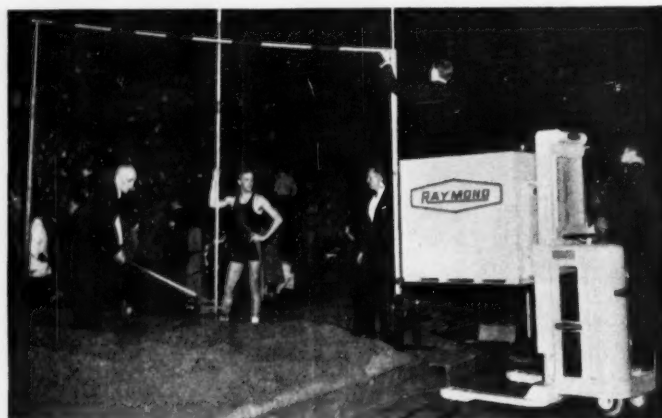
Pioneers of Heavy-Duty Materials Handling Equipment  
888 63rd STREET BROOKLYN 20, N. Y.

Circle No. 125 on Reader Service Card

88

## Cornell Gets a "Lift"

NOVEL uses for industrial trucks never cease to exist. This time the unique feature is pole vaulting, as shown in the accompanying photo. The occasion will be the 7th Annual Indoor Track



Championships scheduled at Cornell University, March 6. The electric industrial truck is being used to simplify replacing the fallen bar. The Raymond truck was loaned to the Heptagonal Games Association with the blessings of these Cornell alumni: George G. Raymond, Sr., president; George G. Raymond, Jr., vice president and general manager; and Carl F. Kellog, advertising manager, all of The Raymond Corporation.

*1 man*

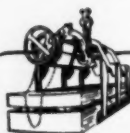
**...handles  
Sheet Steel  
Faster, Easier  
with a**



**C-F LIFTER**

C-F Lifters, under one man operation, pick up, carry and unload more sheet steel tonnage per hour than any other method — and at lower cost per ton. Wide carrying angles hold sheets securely — won't damage high grade sheets; tong action insures safe carrying; fast opening and closing adjustments of Lifter jaws permit shifting from one size pack to another in seconds. C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons.

Write for Bulletin SL-28 for specific examples of C-F Lifter operation and economy.



**CULLEN-FRIESTEDT CO.**

1320 SOUTH KILBOURN AVENUE • CHICAGO 23, ILLINOIS



Circle No. 36 on Reader Service Card for more information

FLOW • MARCH, 1954



## GOOD PLANNING . . .

(Continued from page 66)

possible to fulfill the rush assignment. Obviously, whenever an emergency arose, and the crane was at the "wrong" yard, production might have to wait until it had traveled to the "right" yard and finally was able to fill the rush order. In the meantime, the scheduled work at the yard from which the crane had been pulled would have to wait. A few such emergencies, and the schedule would become hopelessly fouled-up.

The hard-pressed crane was, and still is, an excellent one. As long as no interruptions to its schedule occurred, it was able to do an adequate job for both yards. Some of the weldments used by Joy in its loaders, shuttle cars, mine trucks and continuous miners are tremendously heavy, weighing up to 10,000 pounds. Under some conditions, where loads had to be swung out and over a stack of materials, or where a heavy weldment had to be picked off a pile not easily accessible, the crane could be taxed beyond its capacity, making for dangerous operation.

### Unpaved Area

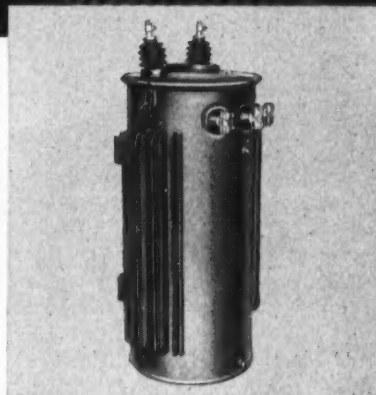
In addition to the problems above, which were common to both yards, there was further difficulty at Yard No. 2 where there was no pavement. In winter and during rainy weather, the yard became practically impassable. Fork trucks attempting to travel about within the 34,000 square-foot area usually ended up mired in deep mud. Operations either stopped entirely or became terribly slow and unsafe.

Many of the castings used by Joy are stored in the yards, in stacks. When muddy conditions developed, bottom castings in the stacks would often sink down into the mud. Then, when they were needed for production, it became necessary to waste valuable time

## ALVEY Engineered CONVEYORS



# Improve the handling of materials in process



These transformers built by Wagner Electric Corporation travel on Alvey Conveyors.

Like many other leading manufacturers, Wagner Electric Corporation, St. Louis, uses Alvey Conveyors in the manufacture of such products as transformers, electric motors and hydraulic brakes.

Smoothing and synchronizing the flow of materials and parts in manufacturing operations is the special talent of Alvey Conveyors. It's only natural that Alvey equipment should do so much, so well. Each conveyor system is *job-engineered* by men who are qualified by knowledge and experience to develop a successful layout.

An Alvey Engineer will be glad to visit your plant . . . to work with you for savings in time and money, for improved production as well.

### ALVEY CONVEYOR MFG. CO.

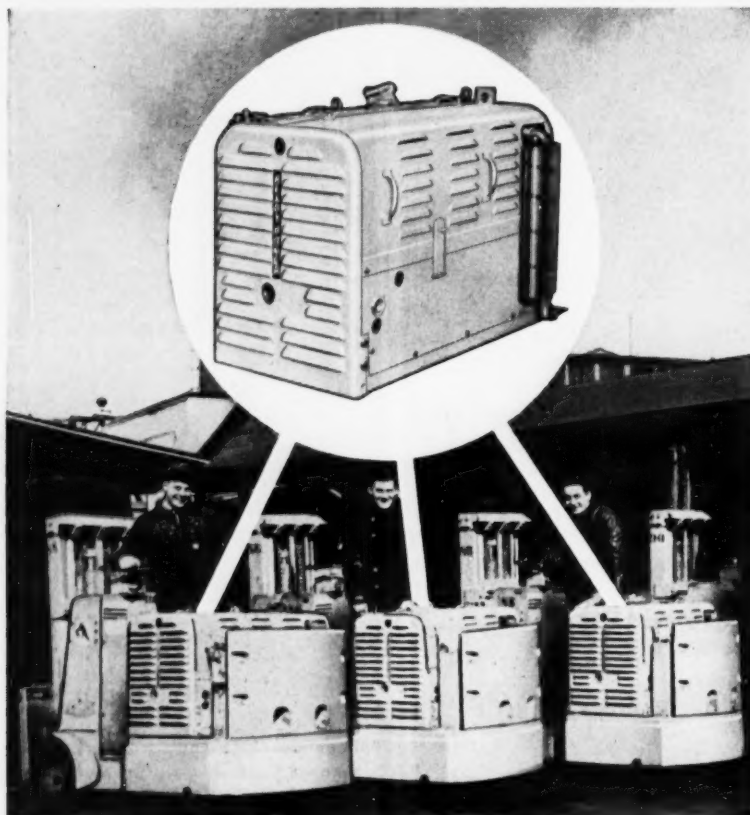
9299 OLIVE STREET ROAD, ST. LOUIS 24, MISSOURI

BRANCH OFFICES IN PRINCIPAL CITIES

# ALVEY

Circle No. 10 on Reader Service Card for more information

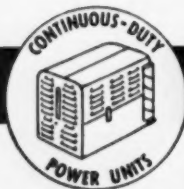
# Ready-Power is the only Interchangeable gas-electric power unit



Interchangeable Ready-Power units allow the most simplified and economical system of preventive maintenance known, with *no truck downtime!* One spare power unit permits rotation of maintenance operations while trucks stay "on the job" . . . an important reason why Ready-Power automatic electric drive moves materials at lowest cost per ton mile!

#### AND CONSIDER THESE ADDED FEATURES . . .

- ONLY READY-POWER has a manufacturing know-how backed by more than a quarter-century of experience in building gas-electric power units.
- ONLY READY-POWER offers Diesel-electric power units for electric industrial truck operation.
- ONLY READY-POWER has a complete range of sizes in both gas-electric and Diesel-electric power units to meet the requirements of all sizes and types of electric industrial trucks.



## The READY-POWER Co.

3838 Grand River Ave., Detroit 8, Michigan

*Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks*

Circle No. 110 on Reader Service Card for more information

## GOOD PLANNING

*Continued*

searching for them and digging them out. Castings which had been so imbedded were always cleaned after they had been retrieved. Often, however, mud or cinders would be missed in the cleaning process, and when machining operations started, tools suffered greatly.

The entire yard situation added up to costly, inefficient, unsafe material handling.

### Three-step Solution

The remedy which Joy's management decided upon consisted of three steps: 1. Another crane was purchased, to relieve the one already owned of half its duties; 2. Yard No. 2 was paved; 3. Yards were laid out for maximum efficiency in storing and handling.

The new crane is a crawler-mounted model with a greater capacity than the old one. It operates entirely at No. 1 yard where the heaviest weldments are stored. On a 10-foot radius, the capacity of the unit is 12 tons. On a 40-foot radius, the capacity is 1.7 tons. A special sling is used with the new crane for handling of gigantic shuttle car bodies which are odd-shaped and which weigh up to 10,000 lb. each.

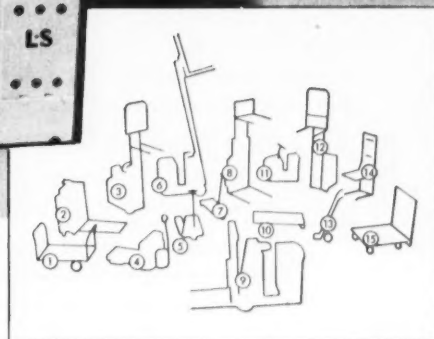
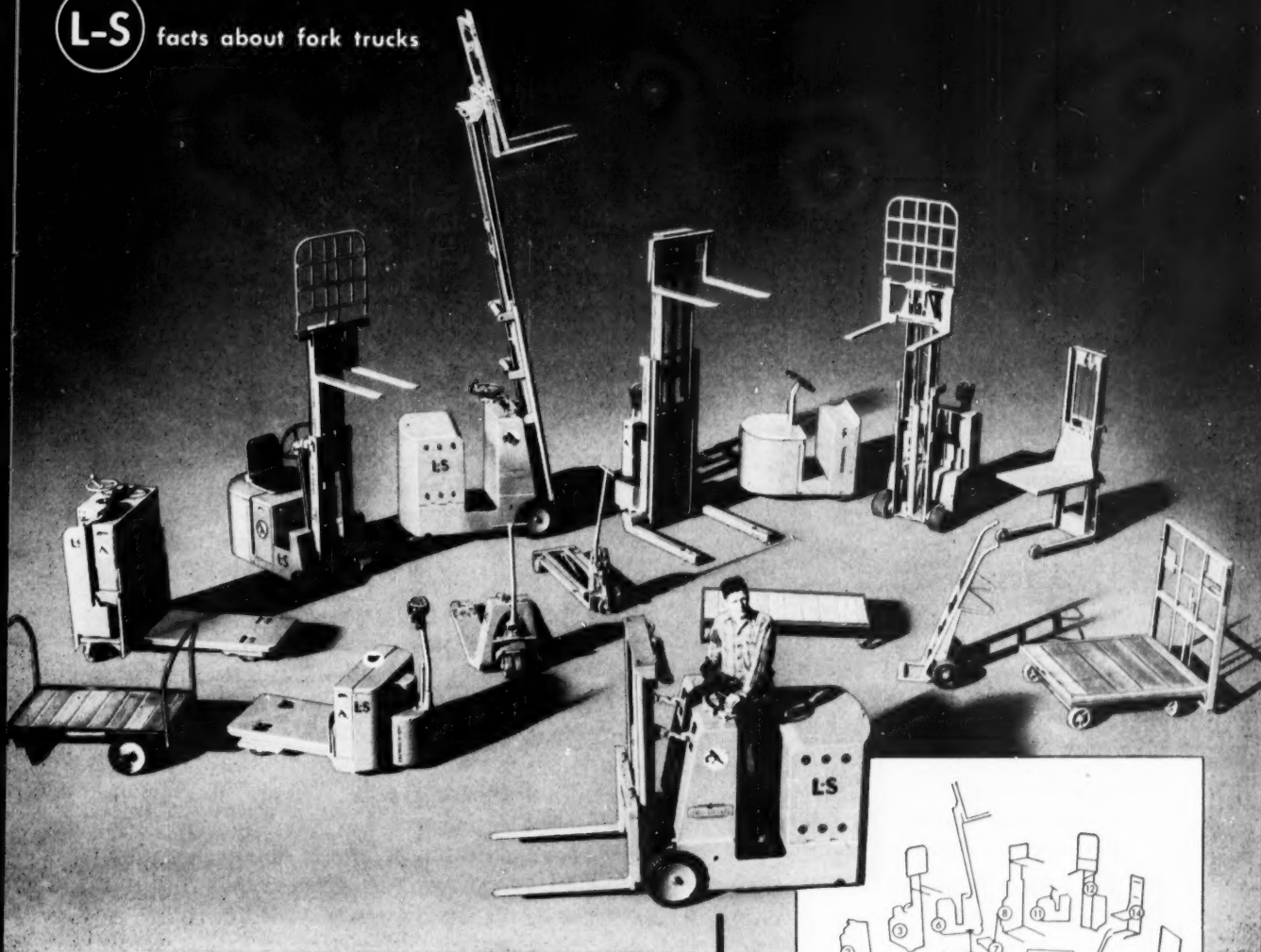
For lighter tasks at No. 1 yard, fork trucks with standard boom attachments are used. Thus, the new crane, with the help of fork trucks, which had been standard equipment at Joy anyway, has completely relieved the tire-mounted crane of its duties at No. 1 plant. Now, the smaller unit is in full time operation at Yard No. 2.

Step number two was the paving of the 34,000 square foot storage area at plant No. 2. Bays were planned and marked off and extra wide roadways were provided for. Now, the full efficiency of the crane at that yard is being realized.

*(More on page 92)*

FLOW • MARCH, 1954

# L-S facts about fork trucks



## Only one manufacturer lets you choose from a Complete Line!

You are sure to select the *right* materials handling truck to solve your problem when you choose from the L-S Master Line of Trucks... the only *complete* line on the market. For L-S offers every type of truck made — from lightweight two-wheelers to heavy duty fork lifts... gives you the extra convenience of "one-stop shopping" for all your truck needs... brings you all the benefits of standardizing on one make of equipment.

And because your local L-S Representative has a *complete* line, he's in a better position to advise you... he's not biased in favor of a particular type of truck or design. He'll let you see and compare *all* the truck designs... then you can choose either hand or power trucks or a suitable combination. So, for the most economical solution to your handling problems, buy from the *complete* Lewis-Shepard Master Line... the *only* complete line of materials handling trucks on the market! Write direct or call your local L-S Man. See "Trucks, Industrial" in the Yellow Pages.

Send for full information on any of the complete line of L-S Materials Handling Trucks. Those shown above are: (1) FloorMaster Truck; (2) SpaceMaster Model "M" Low Lift Electric Truck; (3) SpaceMaster Model "J" Electric Fork Truck; (4) JackLift Electric Walkie Truck; (5) JackLift Hydraulic Pallet Truck; (6) SpaceMaster Model "59" Electric Fork Truck; (7) Master QuickLift Hand Truck; (8) JackStacker Electric "Walkie"; (9) SpaceMaster Model "E" Electric Fork Truck; (10) WeldMaster Skid Platform; (11) Model "J" Electric Tractor; (12) JackStacker Counterbalanced Electric "Walkie"; (13) FloorMaster 2-Wheeler; (14) Handy Hoister Stacker; (15) FloorMaster Dragline Truck.



The "MASTER" Line

### LEWIS-SHEPARD®

104-3 WALNUT ST., WATERTOWN 72, MASS.

Please send me more information on Truck Number  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

Circle No. 81 on Reader Service Card for more information



To save time and money on material handling jobs, investigate the many advantages offered you by a Bucyrus-Erie 22-B crawler crane. Universally accepted as standard equipment for material handling on construction jobs, it can do the same A-1 job around your plants, warehouses and storage areas. Here's why:

**High Maneuverability** lets the 22-B work anywhere you want it, whenever you want it. It's quickly, easily moved from one job to another.

**Independent Boom Hoist** permits boom angle to be changed while machine is swinging or propelling, while load is being hoisted or lowered.

**Accurate Reliable Boom Control** with both raising and lowering full power-controlled by one lever makes it easy to maintain fast operation. A friction clutch on front drum shaft controls hoisting with speed governed by engine throttle. And, an automatic silent ratchet pawl prevents boom from lowering faster than front drum shaft is turning with consequent light service on brake.

**Open-Throated Boom** makes it easy to rig for 2, 3, or 4 parts of line without taking off sheave guards.

45E53

Quickly convertible to dragline, clamshell, shovel or dragshovel, the 22-B has many additional applications around your property that will mean added savings for you.

Write for complete information today.

**BUCYRUS-ERIE  
COMPANY**

SOUTH MILWAUKEE • WISCONSIN

Circle No. 120 on Reader Service Card for more information

## GOOD PLANNING

*Continued*

### Organized Storage

All storage has been accomplished according to a pre-determined plan to make handling and inventory control easier. Materials have been classified by Joy's material control department so that similar items for any of the company's products are stored in the same general areas. In other words, all oil tanks are stored in one area of Yard No. 1. Gears, are stacked in another part of the same yard. Pipe and tubing is in a general area of Yard No. 2.

For most items, trackless trains are used to fill orders for production departments. The trailers are loaded by crane, by fork truck with booms, or by fork trucks with standard forks.

Inventory control is interesting. All of Joy's products are manufactured to suit specific requirements of customers, therefore, there is no way for the company to build up a finished product inventory in anticipation of future demands.

### Forecasts Made

Every month, a meeting of production and sales personnel of the company is held to make machine production forecasts for the future. From the results of that meeting, tentative requirements are set up and materials are ordered for stock. At no time, however, is any of that material converted into finished products on speculation.

To keep production moving at a constant rate, materials are supplied to the manufacturing departments about 30 days ahead of actual production. This is controlled by a planning list which includes the total requirements for production and customer repairs, and which is brought up to date each day. The only items not stocked on the production floor are extra large weldments (cars, bodies, etc.) which remain in the yard storage area until needed.





# SPEEDING PRODUCTION IN THE INDUSTRIES OF THE WORLD

## The Exhibition which shows the way to greater output at lower cost

Britain's post-war need for greater and greater production has made her materials handling industry one of the largest and most progressive in the world.

Next June at Olympia, London, the most comprehensive range of machines and equipment ever assembled will be on show. There, you can talk to the manufacturers themselves; learn which of these ultra-modern labour-aiding devices can best benefit *your* business. At the Convention, held simultaneously, experts will discuss the latest methods for many industries and answer questions. Special facilities for overseas visitors make every visit straightforward and profitable. Mail the coupon today for details.

## The world's largest display of

Conveyors, elevators, hoists, stackers, cranes, mechanical loaders and shovels, fork lift trucks, industrial trucks, coal handling plants, overhead runways, aerial ropeways, grain handling plant, wagon tipplers, pneumatic installations and ancillary equipment.

## Exhibits at work:

So vast is this exhibition that ample floor space is provided for much of the equipment to be demonstrated under working conditions.

## Special Facilities:

Full information service; free consulting bureau; easy access by special staircase to first floor exhibits; overseas visitors' reception & lounge; industrial cinema; post office.

# See the latest & best equipment at Britain's fourth MECHANICAL HANDLING EXHIBITION

OLYMPIA · LONDON · 3-19 JUNE 1954

Organized by "Mechanical Handling" the journal of industrial mechanization

**MAIL  
NOW  
FOR  
FULL DETAILS**

To "Mechanical Handling," Dorset House, Stamford Street, London, S.E.1, England

Please send me the 1954 Exhibition brochure with details of Convention, admission, etc.

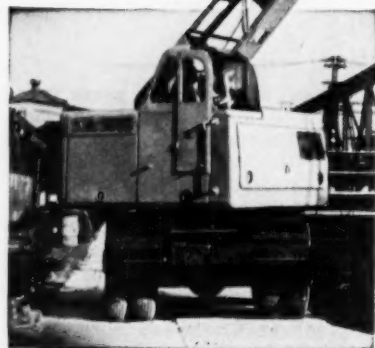
NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

18

# GAS ECONOMY ?

**1 gallon  
per hour!**



**first of  
COLES  
CRANES**

## Bonus FEATURES

COLES advanced engineering with Gas-Electric design reflects the continuous study made of Industrial requirements. No other crane of similar capacity can show such terrific economy in **BOTH OPERATING AND MAINTENANCE COSTS**. A few users report maintenance cost **LESS** than on average fork lift truck. **ECONOMY** of gas is only one of the many COLES BONUS features.

### A Mobile Crane is the Most Flexible Lifting Tool Yet Designed!

● The Coles Crane is the most flexible of mobile cranes, having 360° full circle swing, cantilever type boom, and reversible steering. Every conceivable **SAFETY DEVICE** is fitted as standard on every COLES CRANE. These devices are designed to protect the Operator, the equipment and your investment. In Fact, COLES is the outstanding crane—that gives the Material Handling Engineer—remote control over his operator. When considering the purchase of a mobile crane—it will pay you to investigate COLES.



### WRITE FOR CATALOG

Information pertaining to several models with complete specifications and Illustrations of the various lifting operations yours for the asking.



The name that carries weight  
in material handling

**COLES  
CRANES**

**COLES CRANES, INC., 942-F, JOLIET, ILL.**

Circle No. 151 on Reader Service Card for more information

## LONG, HEAVY HAULS . . .

(Continued from page 80)

### Trains of Many Types of Trucks

Many styles of floor trucks are employed in trains. (Usually, a design somewhat more rugged than that required for manual operation is recommended.) In one illustration you will see a train of dollies being towed by a fork truck (also carrying a fork load). This system has made appreciable savings for a rug manufacturer. Plant-wide costs of handling and transporting were reduced 50 percent—and volume handled increased 300 percent—when men were relieved of the job of pushing individual dollies. In moving bulky rolls of carpet between departments, caster mounted floor trucks are pulled by tractor. Four rolls weighing well over 2000 pounds can be carried on one truck.

Note also the special truck used to haul delicate instruments (singly or in trains) around the Lockheed Aircraft plant in Marietta, Ga. Of angle iron and wood construction, they are lined with one inch thick, canvas covered foam rubber and equipped with spring-mounted, pneumatic, puncture-proof tires. A full-length, hinged half-door provides accessibility in loading and unloading electronic equipment—carried from receiving to several inspection stations, storage, and assembly areas.

Significant economies were achieved with a trailer train at the Valleyfield, Quebec, plant of Montreal Cotton Ltd. With a wide assortment of floor truck designs to handle many shapes and types of materials, the system has reduced handling costs 37 percent. Formerly, direct labor and hand-trucking ran to \$40,000 annually. Now, the annual cost of the tractor-trailer system is \$14,500—69 percent of which represents labor expenditure.

### Short Carrys for Very Heavy Loads

In another team of power truck and dolly, long loads of sheet steel, pipe and other shapes are deliv-

**PUSH—  
PUSH—  
YOU PAY THEM TO  
PUSH**

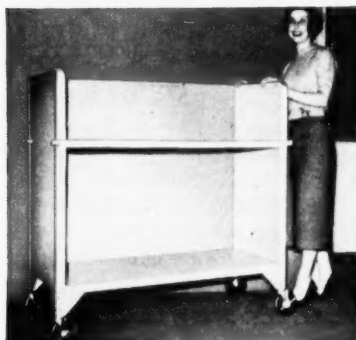
So—what a smart money-saving idea for you when they push **THE LIGHTEST of METALS—**

## MAGNESIUM

Brooks & Perkins of Detroit—pioneer Magnesium fabricators with a Magnesium mill that rolls plate and sheet—has developed the

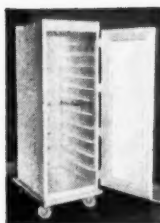
*MINIMAX  
Pusharound*

made of Magnesium sheet, plate, and extrusions—unbelievably light in weight. They save worker fatigue, time, awkwardness and accidents.



Push shelf merchandise

Push factory scrap or trash



Push and load-into-trucks baked goods or candy

What do your people push that might be pushed easier and much more economically? Write or phone B&P for pictures, design, and price info. Tell us about your uses and present equipment, and let B&P engineers advise you about saving your Pushmoney with **PUSHAROUNDS**.

**Brooks & Perkins, Inc.**

Pioneer Magnesium Fabricators

1944 W. FORT ST. • TASHMOO 5-9900

DETROIT 16

Circle No. 149 on Reader Service Card  
**FLOW • MARCH, 1954**

ered to production equipment from outside storage at Hercules Steel Products Co., Galion, Ohio. The firm uses low-lift platform trucks and dollies which vary in length from 9 to 10 feet and have heavy duty casters on the outboard ends. They are designed to be engaged by the truck's platform which is inserted beneath the dolly platform and raised. In this way, loads up to 18 feet long are handled by a standard truck with 54 inch long platform. And although the truck capacity is only 6000 pounds, loads weighing up to 10,000 pounds are handled easily and safely.

Another type of "tow" has been in use for some time at the Indianapolis mill of Bridgeport Brass. Transfer cars carrying 20-foot sections of 1/8-inch wall brass tubing are moved by an available fork truck whenever required. To allow unobstructed visibility and maximum control over the long, heavy load (10,300 lbs.), a "side drive" is used. A bracket extending from the front side of the transfer car at a 45 degree angle is engaged by a bracket on the truck. The rear of the brass handling truck is prevented from swinging out of control by a heavy chain attached to the fork truck. Swivel casters with semi-steel wheels, 8 inches in diameter, roll these loads about 75 feet, 50 or 60 times a day, across rough, oily, concrete floors and narrow gauge railroad tracks.

### Conveyor Truck

One of the major steel companies has a conveyor truck of 54,000 pound capacity for transporting coils of strip from the pickling line in the hot mill to the cold mill, a distance of about 1000 feet. Coils are rolled off the end of the pickling line conveyor onto the built-in conveyor on the truck platform. When loaded, they are held in position by a strap running across the tops. Ram trucks unload them at the cold mill.

Heavy duty tractors and their accessories can also do more heavy moving jobs than is generally realized. They are employed for moving heavy machinery on skids either within the plant or to shipping docks . . . for positioning

**Lightest-weight  
metal in  
PLATE and  
SHEET**

**Magnesium**

Production at the B&P Rolling Mill is flexible. Do you have special or unusual requirements? Odd-lot sizes and gauges?



Order from B&P anything you want rolled in Magnesium—the easily-lifted-and-carried but strong, stiff, rust-and-alkali-resistant metal. You can count on prompt delivery from the B&P Mill, F.O.B. Detroit.



There are many uses for this lightest-weight **TREAD PLATE**: dockboard, yard ramps, ladder treads, removable flooring, movable ladders and platforms, scaffolding, many others.

At your service: ideas and designs from the B&P engineers. Let them work with you on Magnesium parts or products, including fabrication and assembly.



**BROOKS and  
PERKINS, Inc.**

Pioneer Magnesium Fabricators

1944 W. FORT ST. • TASHMOO 5-5900

DETROIT 16

Circle No. 18 on Reader Service Card

**FAST!  
EASY!**

**convenient...**



**MANAGEMENT** For Copying Letters, Reports, Contracts, Instructions, Statistics, Etc.



**ENGINEERING** For Copying Drawings, Patents, Tracings, Specifications, Blue Prints, Etc.



**SALES** For Copying Orders, Letters, Inquiries, Presentations, Price Sheets, Etc.

## PHOTOCOPYING



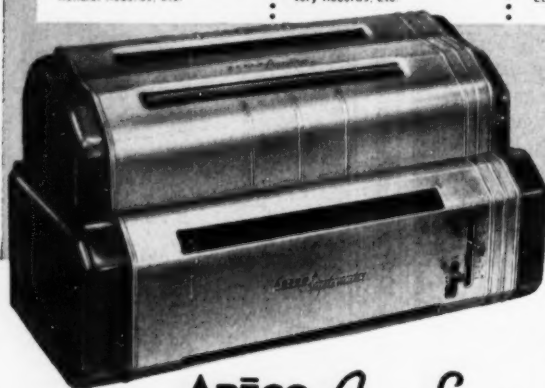
**BOOKKEEPING** For Copying Work Sheets, Tax Returns, Checks, P & L Statements, Financial Records, Etc.



**MANUFACTURING** For Copying Schedules, Work Sheets, Control Sheets, Master Records, Inventory Records, Etc.



**SHIPPING** For Copying Receipts, Claims, Freight Bills, Packing Slips, Bills of Lading, Etc.



**APÉCO**  
Systematic *Auto-Stat*

EVERY DEPARTMENT can use the Apeco Systematic Auto-Stat. This new all electric photocopying machine prints, processes and dries automatically. It's fast—dry copies in less than 45 seconds! It's convenient—fits on the corner of any desk... it's ready for instant use! It's easy—anyone can operate it! Saves up to 80% on copying jobs. Eliminates retyping, hand copying, checking or costly outside copying service. Makes legally accepted black and white or colored copies from any original up to 11" x 17"—printed on one or two sides. So low cost—a complete Apeco Systematic Auto-Stat installation is priced well within the budget of even the smallest firm.

**Lifetime  
Service  
Guarantee**

**Use It To  
COPY  
ANYTHING**

*right in your  
own office!*



**NEW COMPLETE PHOTOCOPY INFORMATION KIT—IT'S FREE**

**American Photocopy Equipment Co.**  
1950 W. Peterson, Chicago 26, Illinois

**RUSH ME NEW PHOTOCOPY INFORMATION KIT** containing booklet on the Apeco Auto-Stat plus separate folders on copying tax returns, color copying and copying on preprinted forms. I understand this free photocopy kit shows how I can use the Apeco Auto-Stat in my business.

Name

Firm

Address

City  State

In Canada: APECO OF CANADA, LTD., 134 PARK LAWN ROAD, TORONTO, ONT.

Circle No. 168 on Reader Service Card for more information

## LONG, HEAVY HAULS

*Continued*

large crates in warehouses or in loading and unloading... moving skid loads around the yard... positioning rail cars... and the like. A push bumper attachment (rear and front) helps make a tractor available for these jobs and more. Crawlers for use indoors can be equipped with smooth grouser or rubber pads.

### Handling Large Unit Loads

Straddle trucks and riding type platform trucks are being used to an increasing degree to transport good size loads over considerable distances. Lumber and building supply dealers have made wide use of straddle trucks to haul materials between railroad sidings and their yards—at distances from a few blocks to five, ten or more miles.

Straddle trucks are also used occasionally for customer deliveries. Average distance for this service has been around 15 miles, but trips up to 100 miles have been reported. Hauls of this extent, though, are not considered practical. Wide use is made of straddle trucks to carry all sorts of loads around plant yards and between departments. These include boxes, drums, and other bulky items as well as shapes of steel and lumber.

Industrial pickup trucks and load carriers, or riding type platform trucks, come in a wide variety of styles with body designs and accessories adaptable to many kinds of loads. They carry sizable weights, at fast handling speeds, for just about any distance one might require.

For pictures and data used in this article, FLOW thanks the following firms.

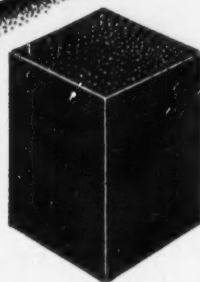
Allis-Chalmers Mfg. Co.; Automatic Transportation Co.; Autoette, Inc.; Baker-Lull Corp.; Barret-Cravens Co.; The Buda Co.; Caterpillar Tractor Co.; Clark Equipment Co.; Elwell-Parker Electric Co.; Hyster Co.; Faultless Caster Corp.; Market Forge Co.; The Mercury Manufacturing Co.; The Oliver Corp.; and Towmotor Corp.



# PACKAGING AND SHIPPING SECTION

## TABLE OF CONTENTS

Packaging and Shipping Idea of the Month . . .	101
Stitching and Stapling Equipment . . . . .	102
9½ Tons Less Tare Weight = \$20,300 . . . .	107
Humidity Conditioning Aids Packaging . . . .	110
Underpass Drops Overhead— Beats Shipping Roadblock . . . . .	114
What's New in Packaging and Shipping Equipment . . . . .	117
Shipping Nails, Screws and Heavy Metal Parts . . . . .	119
What's New in Packaging and Shipping Free Literature . . . . .	123



# An Easy Index to This Month's Advertisers

Are you looking for a particular type of packaging and shipping equipment? Listed below are advertisers according to type of product they are advertising in this issue. We have attempted to make your job a little easier by listing them as often as possible. To use this index, find the type

of product in which you are interested . . . turn to the advertisers listed under that product . . . circle the correct numbers on the reader service card, mail it, and you'll get complete information in a jiffy.

## **BULKHEADING**

Evans Products Co. ....	100
-------------------------	-----

## **CONTAINERS**

Bigelow-Garvey .....	122
Champion Co. ....	126
General Box Co. ....	123
Hinde & Dauch Paper Co. ....	127
Wirebound Box Mfrs. Assoc. ....	130

## **CUSHIONING AND BARRIER MATERIALS**

American Sisalkraft Co. ....	132
Mid-States Gummed Paper Co. ....	131
Nichols Paper Products Co. ....	129
Thilmany Pulp & Paper Co. ....	106

## **GLUES, TAPE AND TAPE DISPENSING EQUIPMENT**

Angier Corp. ....	121
Behr-Manning Corp. ....	120
Derby Sealers, Inc. ....	126
Minnesota Mining & Mfg. Co. ....	99

## **MARKING AND STENCILING EQUIPMENT**

Adolph Gottscho, Inc. ....	128
Cushman & Denison Mfg. Co. ....	129
Ideal Stencil Machine Co. ....	124
Marsh Stencil Machine Co. ....	128
Multistamp Co. ....	131
Weber Addressing Machine Co. ....	125

## **PACKAGING MACHINERY**

ABC Packaging Machine Corp. ....	130
Black Products Co. ....	124
International Paper Co. ....	118

## **STRAPPING, STAPLING AND STITCHING EQUIPMENT**

Brainard Steel Div., Sharon Steel Corp. ....	111
Dave Fischbein Co. ....	128
A. J. Gerrard & Co. ....	128
Gerrard Steel Strapping Div. ....	116
International Staple & Machine Co. ....	109
Stanley Works, The ....	113
Sackner Products ....	129
Signode Steel Strapping Co. ....	114 & 115

# World's Strongest Tape?

Thousands of filaments imbedded in the pressure-sensitive adhesive of "Scotch" Brand Filament Tape make it *super-strong* and shock-resistant for heavy-duty packaging and materials-handling. Furthermore, the exclusive "mirror surface" adhesive of this newly improved tape gives 100% tape contact; puts all the amazing strength of the tape to work. For free test sample, and complete information, just write on your letterhead to Dept. F-34.

FILAMENT TAPE... one of  
**300** PRESSURE-SENSITIVE TAPES  
for industry, trademarked...

REG. U.S. PAT. OFF.  
**SCOTCH**  
BRAND

The term "Scotch" and the plaid design are registered trademarks of Minnesota Mining and Manufacturing Co., St. Paul 6, Minnesota. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ontario, Canada.



Circle No. 97 on Reader Service Card for more information

FLOW • MARCH, 1954

**LOOK** what  
you can do  
with it!



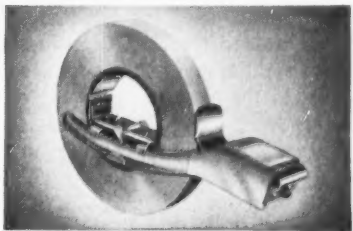
**SAFER SHIPPING** when you secure loads against shifting with "Scotch" Brand Filament Tape. Easy to apply; easy to remove at destination. Tests have proved that goods come through 99% "Safe Shipments"!



**SECURE ODD-SHAPED PARTS** quickly and easily with a few quick wraps of "Scotch" Brand Filament Tape with the new "mirror surface" adhesive. Won't scratch soft metals; parts can't slip loose. Tape comes in red, white, black, and transparent.



**CUT BUNDLING COSTS**, get better results with "Scotch" Brand Filament Tape. Makes substantial savings in labor costs; cuts freight costs; does not mar finished pieces.



**APPLICATION IS QUICK, EASY** with this new hand dispenser designed specially for "Scotch" Brand Filament Tape. Heavy-duty construction; rustproof. Improved blade quickly cuts tape up to 1-inch wide.



**cuts damage costs  
for shippers with  
Evans D-F Loader equipped cars**

The progressive Wabash Railroad, alert to modern improvements . . . aggressive in testing and adopting cost-cutting methods and equipment, maintains a continuous program of service improvement for shippers.

This far-sighted policy was responsible for the installation of the Evans D-F Loader in Wabash box cars. The D-F Loader is an Evans development that locks in the lading with cross members called "Wonder Bars". These bars make wooden dunnage unnecessary and eliminate damage in transit. The experience of the Wabash has proven that the Evans D-F Loader pays for itself over and over again. They get increased business from shippers. They get increased revenues from heavier loading per car. They realize substantial savings from reduced damage claims . . . slashed to less than 1/4 the national average.

The Evans D-F Loader has been proven by years of operation and millions of damage-free ton miles on 34 Class I railroads. Write for illustrated brochure to Evans Products Company, Dept. AF-3 Plymouth, Michigan.

**EVANS D-F LOADER**  
TO ELIMINATE DAMAGE & DUNNAGE

LOCKS LADING INTO BOX CARS

Circle No. 47 on Reader Service Card for more information

**WHATEVER THE LOAD...  
EVANS D-F WONDER BARS  
HANDLE WITH CARE!**



**THEY SECURE THE LOAD**

Wonder Bars, placed against the lading, lock into side rails, hold the load securely, so it can't shake, shift or sway.

**THEY SUPPORT THE LOAD**

Deckboards, placed on Wonder Bars permit multiple loads, no matter how fragile the lading. Floor to roof capacity!

**THEY SEPARATE THE LOAD**

Wonder Bars and deckboard bulk heads divide lading into 2 to 9 compartments — each an easily handled, securely anchored unit.

**EVANS ALSO MANUFACTURES THE  
FAMOUS AUTO-LOADER**





## Corrugated Pads Used as Dunnage

ONE of the television industry's most troublesome problems, damage to delicate TV chassis during transit, is being solved in a simple, inexpensive manner by Raytheon Manufacturing Co. The company ships Television sets, stacked three-high and three-wide in a standard 40-ft. box car. Flattened corrugated cartons used as fillers between sets prevent load shifting from side to side. Strips of wood gating, held in place by steel strapping, prevent lengthwise shifting or other movements due to car bumping.

Formerly, cross-country shipments of Raytheon TV sets usually contained at least six sets which had been damaged enroute. With the new method, there were no damaged sets in a load shipped from the company's Chicago plant to Fresno, California. The sets arrived in excellent condition and without evidence of load shifting despite normal shocks registered on the car's standard impact register device.



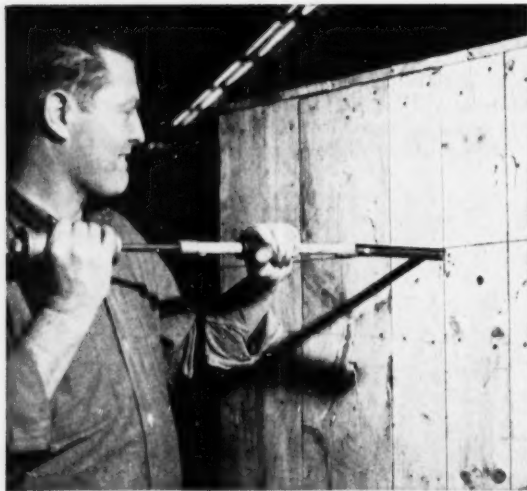
FLATTENED CORRUGATED CARTONS (above) act as fillers in car-load of Television Receivers, prevent lateral shifting of load. Strips of wood gating, held in place by steel strapping (below) prevent lengthwise shifting which might result from car bumping.



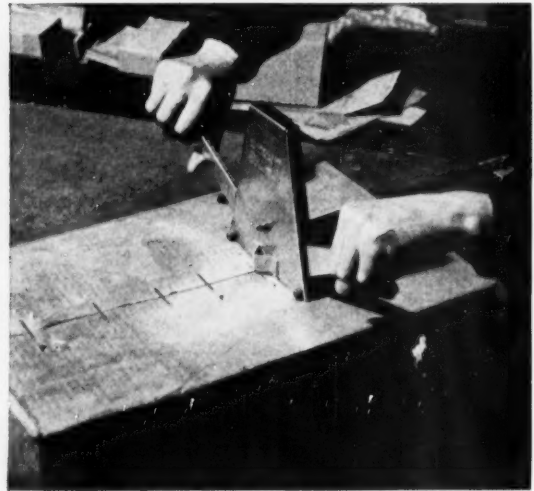
What the Purchasing Agent  
Should Know About

## Stitching

AIR-OPERATED PLIER type stapler is used to assemble special chair carton at Charlton Co., Inc., Fitchburg, Mass. In actual use, cartons are built up around wrapped and padded chairs at end of production line, and stapled closed. This method was not practical without the plier stapler.



STRIKE-TYPE tacker is used at General Electric Co., Fitchburg, Mass. to staple over wire binding on container. This conforms with Government Specs. Staple channel protrudes from the bottom of the stapler.



RETRACTABLE ANVIL TYPE stapler is used for carton top-stitching, after filling. Note perforations caused by anvil piercing corrugated board. After each staple is clinched, anvil retracts without damaging contents.

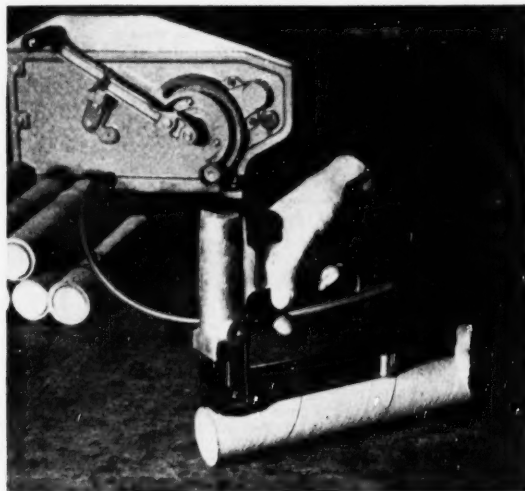
# and Stapling Equipment

"Which machine will do our job most efficiently?" . . . "What machine can we get to do our particular job?" . . . "What manufacturers will adapt stock equipment to meet our special requirements?" . . . questions to which you will want to have answers before buying stitchers or staplers. This article contains many helpful ideas along those lines.

by Wendel W. Gibson\*

**F**EW, if any, devices used by industry are available in more types and varieties than are stapling and stitching machines. Most manufacturers offer lines of equipment which will provide answers for almost any problems which might arise from the need for closing a container or for attaching one object to another. In addition, manufacturers are prepared, in most cases, to adapt standard equipment to specific needs.

Whenever new types of packaging materials or new methods of packaging are devised, the possibility is opened for development of another change in stapler or stitcher design. It is gratifying to know that so many machines are available. On the other hand, how does one select the right unit for a specific job in a specific industry?

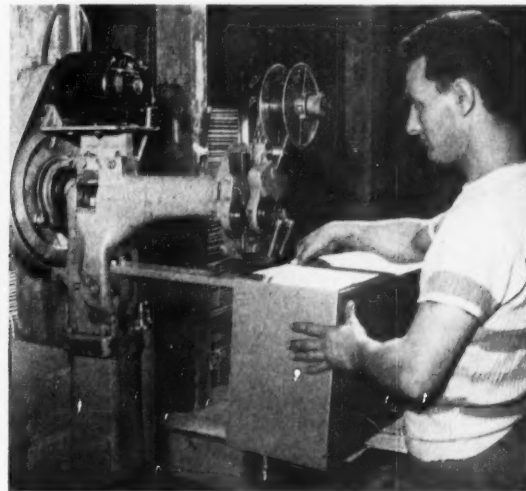


**AIR TACKER** can be used wherever it is necessary to drive staples into sides of wooden containers for holding tags, or for applications like this. Wood plugs are secured into ends of tubes holding welding rods.

A basic understanding of the general uses of staples and wire stitches and the primary purposes for which general types of equipment were designed, is an important prerequisite to selection. All end uses for staples can be grouped under one of two headings: 1. Uses where the staple will be an integral part of the finished product; 2. Uses where the staple is expendable, as in the case of packaging. This report will discuss equipment designed for the second classification.

## What Types Are Available?

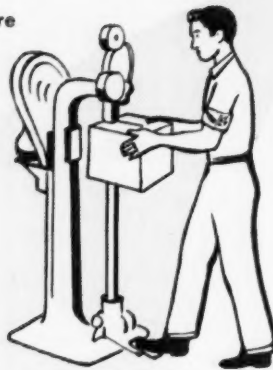
Basically, all stitching and stapling machines fall under eight general classifications. They are: wire stitchers; stationary machines which use pre-formed cohered wire staples; one-hand, compression type



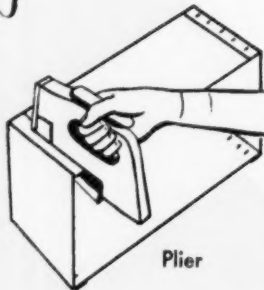
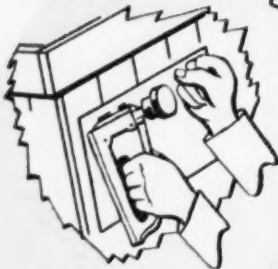
**WIRE STITCHER** is designed for heavy duty bottom stitching of containers. All wire stitchers are power driven since the force required to operate them is greater than can be steadily exerted by hand or foot.

## Stitchers and Staplers . . .

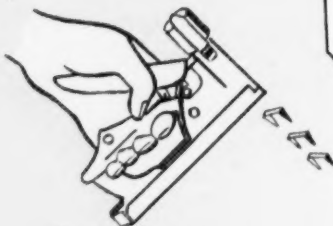
Electric Wire  
Stitcher



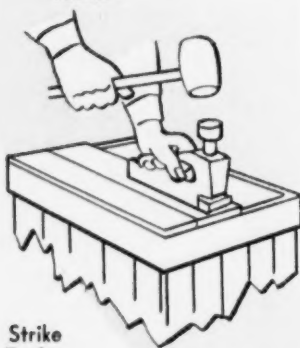
Strike  
Tacker



Plier



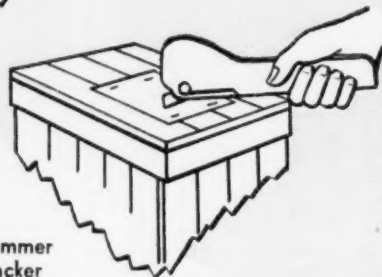
Compression  
Tacker



Strike  
Tacker  
(Using mallet  
for heavy-duty  
work)



Air  
Tacker



Hammer  
Tacker

tackers; two-hand, strike type, tackers; hammer tackers; pliers; machines which clinch without anvils; machines which clinch with retractable anvils.

Wire stitchers include all machines which operate in such a way that they form their own staples from a continuous coil of wire as it feeds through the machine. All of these machines are power driven making the stitching operations faster and minimizing manual effort on the part of the operator. They are comparatively large and heavy and are not portable. In almost every case, they are floor types or bench types.

Floor-model and bench-model machines which use chips of pre-formed staples rather than continuous lengths of wire are powered by foot, hand, air, solenoid or electric motor. Machines in this category, as well as those classified as "wire stitchers", can be either tacking or clinching types, as determined by their end-use.

Wire stitchers and floor-operated pre-formed staplers have similar applications in the packaging

FOR THESE JOBS ↓	USE THIS EQUIPMENT (As Checked) →	ELECTRIC WIRE STITCHERS	FOOT-OPERATED FLOOR OR BENCH MODELS	COMPRESSION TACKERS		
		NOT PORTABLE				
BOTTOM CLOSURE OF R.S. CARTONS		✓	✓			
TOP CLOSURE OF R.S. CARTONS						
TOP OR BOTTOM CLOSURE OF OVERLAP CARTONS		✓	✓			
MAKING-UP TELESCOPIC CARTONS		✓	✓			
STITCHING CARTONS WITH EXTENDED FLANGES						
FASTENING CORRUGATED AND OTHER WRAPS TO WOOD, ETC.				✓		
LINING CRATES WITH PROTECTIVE PAPERS, BARRIERS, ETC.				✓		
CLOSING FILLED BAGS		✓	✓			
LINING BOX CARS				✓		
CLOSING TUBES		✓		✓		
STITCHING CARTON INSERTS		✓	✓			
COVERING PALLETS				✓		
TAGGING CRATES				✓		
STAPLING OVER WIRE AND STEEL STRAPPING						
ATTACHING METAL TAGS (TACKING)				✓		
CLOSING TELESCOPIC CARTONS						
CLOSING FLEXIBLE BARRIERS, ETC.						



## Many Types For Many Jobs

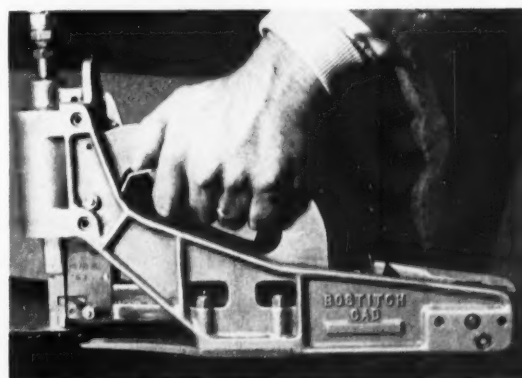
and shipping department. Common uses include; bottom stitching of cartons; top stitching assembly of telescopic cartons; stitching of inserted end pieces to wrap-around or sleeve type containers; making-up of carton inserts; lining wood inserts with protective papers or barriers; attaching corrugated or other packaging materials to wood. Ordinarily, such machines are called for where quantities are fairly large.

"Tackers" are so called because they drive staples into wood or other material just as a tack would be driven. Compression tackers, hammer tackers and air tackers are used for: lining freight cars with paper or other protective materials, lining or covering pallets; lining crates; tagging crates; temporary closing of cartons; stapling covers over pallet loads; closing cardboard tubes by stapling wood plugs in ends; tagging cartons temporarily for in-plant movement; fastening corrugated or other protective materials to

(More on next page)



AIR OPERATED PLIER (left) and hand operated plier (right), are used to fasten tucked-in ends of a corrugated wrapper. Either stapler does job satisfactorily, choice of one over the other depends on volume.



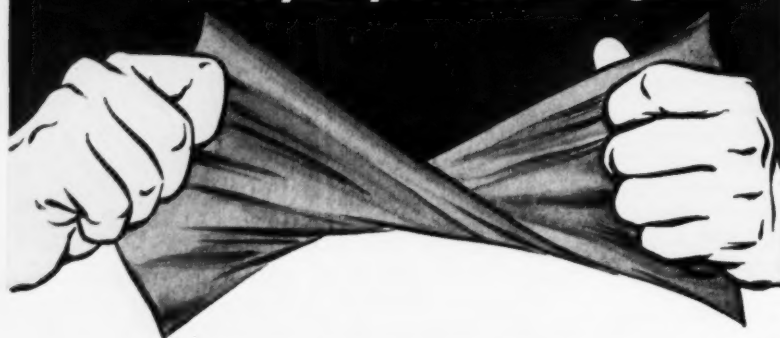
AIR-DRIVEN PORTABLE STAPLER operates under air pressures from 80 lb. to 90 lb. It can be positioned and operated with one hand.



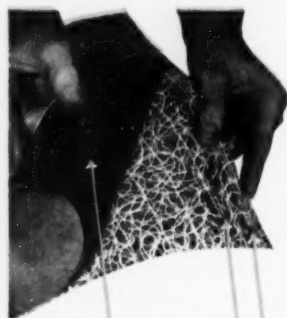
HAMMER TACKER is illustrated here in one of its many uses . . . installing lining in box cars. Lining is put in car before it is loaded with grain, bulk chemicals or other loose bulk material. It prevents sifting, protects against moisture and keeps foreign matter out.

STRIKE TACKERS	HAMMER TACKERS	PLIERS (HAND)	AIR TACKERS	AIR PLIERS	RETRACT- ABLE ANVIL MACHINES	SPECIAL MACHINES
PORTABLE					STATIONARY & PORTABLE	
					✓	✓
					✓	✓
		✓		✓		
		✓		✓		
		✓		✓		✓
	✓		✓			
	✓		✓			
		✓		✓		✓
		✓		✓		
			✓			
		✓	✓	✓		
✓	✓		✓			
✓	✓		✓			
✓	✓		✓			
	✓		✓			
					✓	
		✓		✓		

**Twist it-Tug it-Flex it-**  
**...fits your product like a glove!**



**IT'S THILCO'S NEW, TOUGH**  
*Machine Creped, Elasticized*  
**Wrap-DRI PAPERS—TYPE MR AND JR**



STURDY 30 LB. KRAFT  
 COATED WITH ASPHALT  
 ON BOTH PLIES

EVENLY FORMED  
 MAT OF TWISTED  
 THILCO FIBRES

NOTE EXTRA  
 EDGE STRINGS FOR  
 TEAR RESISTANCE



Get this  
 FREE  
 brochure

New, dispersed fibre reinforcing for unusual toughness and strength — plus *machine creping* for extra flexibility and cushioning... That's the combination that makes Thilco's type MR and JR asphalted waterproof papers your best bet for economical, heavy-duty protective wrapping. With Wrap-Dri you get *three-fold* packaging superiority —

1. **FLEXIBILITY** — Extra pliability and ease of handling speeds up wrapping production — cuts skyrocketing labor costs.
2. **CONFORMABILITY** — Added stretch and moldability permit snug-tight wrapping of the most irregularly shaped products.
3. **EXTRA STRENGTH** — Machine creping with its cushioning effect, built-in-stretch base kraft, flexible double-coated laminants and reinforcing fibres with edge strings, all add up to superior strength — higher resistance to puncture and tear.

There's a Wrap-Dri grade for every need. Type MR *machine creped* for a heavy duty and JR *machine creped* for utility use — both available in wide widths up to 10 ft. without lap or seam. Wrap-Dri gives excellent M.V.T. protection and can be furnished mold-proofed or "special treated" to meet most any specific requirement — plus print decorating for product identification. Write for new fact folder today!

**THILCO**

*Functional Papers FOR PROTECTION THAT COUNTS!*

NEW YORK • CHICAGO  
 CINCINNATI  
 DETROIT • MINNEAPOLIS

THILMANY PULP & PAPER COMPANY  
 KAUKAUNA • WISCONSIN

Circle No. 132 on Reader Service Card for more information

**STITCHING & STAPLING**

*Continued*

finished products such as furniture; fastening loose parts or accessories to crate or product; fastening corrugated board to wood in making up certain type cases and packages; stapling tape or string to bundles of wood parts.

Plier type machines are designed to drive staples through material and to clinch them in much the same way as desk-type staplers. They require anvils which are on one end of one arm of the machines. The staple-driving mechanism is contained in the other arm and the machines operate by leverage, hence the name "plier". Both hand and air operated plier staplers are used extensively in packaging and shipping operations for jobs like fastening wrap-around papers and barriers, closing bags, making-up telescopic cartons, making-up inserts for cartons, tagging many types of packages.

**New Application**

One of the newest applications for air-operated pliers is the fastening of inserted end pieces in wrap-around type cartons. A special chair carton using end pieces stapled in place was made possible recently, largely because of the plier-type stapler. Many other ingeniously designed packages have made their appearance recently and were made practical and economical only by the application of this powerful, portable tool.

Two-hand, or "strike type" tackers and hammer tackers are used for some of the same kind of work that is accomplished with compression tackers. However, because of the principal of operation, the strike-type machine can drive a longer and heavier staple than the compression type. Newer machines in this class are being used for such jobs as stapling over steel strapping and stapling

*(Continued on page 122)*

## 9½ Tons Less Tare Weight =\$20,300



By changing the method of packaging its cotton pickers (in component parts), International Harvester Co. is now enjoying savings of nine and one half tons in tare weight per 100 machines. Translated into actual dollar savings, that represents \$1283 savings for every 100 containers and \$3441 for their assembly. Yearly over-all packaging savings amount to \$20,300.

### How They Do It

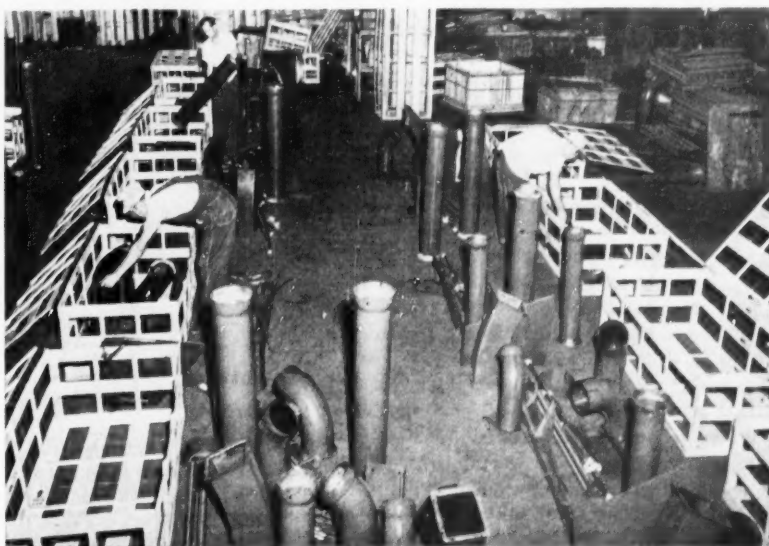
Three sizes of mechanical cotton pickers are made

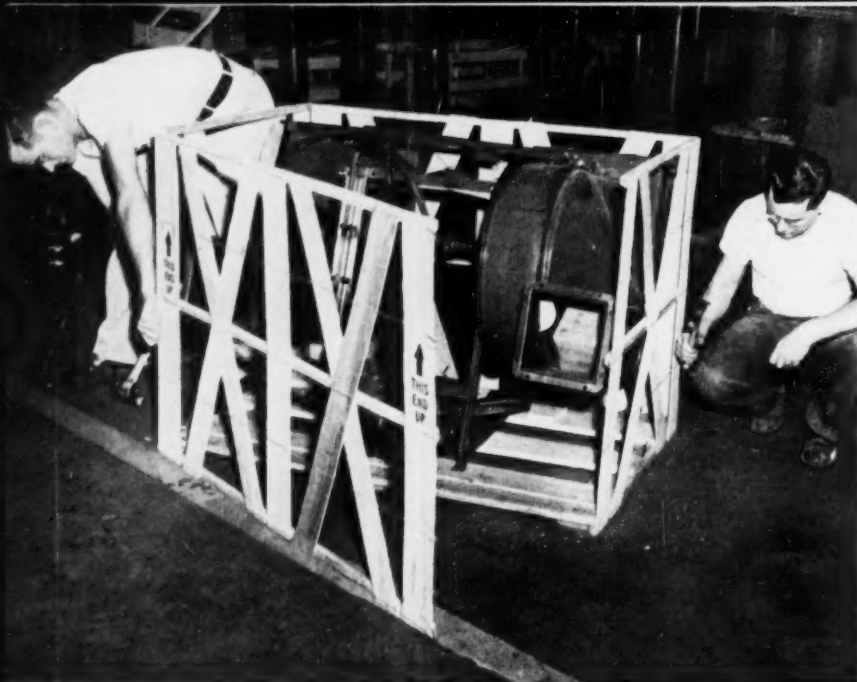
at the Memphis Works of International Harvester, ranging in gross weight from 7000 to 9700 lb. About one-third of the machines are assembled and shipped three to a flat car. The remainder are shipped knocked-down and with parts packed in seven different shipping containers.

About a year ago, the company converted to the use of wirebound crates, engineered and pre-fabricated for six of the seven parts; the platform, basket cover, conveyor pipe, fan and main drive housing, radius rod shield, and drive wheel shield. The divi-

SEVEN CONTAINERS are used to ship knocked-down mechanical cotton pickers like the one shown at upper right. Manufacturer of the unusual machine which has greatly increased profits for cotton growers is International Harvester Company.

WIREBOUND CRATES, (right) were designed specifically for packing of conveyor pipes of the mechanical cotton picker. This is one of six designs to hold all parts of the knocked-down mechanical pickers.





Courtesy Wirebound Box Mfrs. Assoc.

**INITIAL CONTAINER COST** has been reduced 43% for packaging of the dual fan and main drive housing of the cotton picker. Tare weight has been cut from 75 to 46 lb. and assemblies packed per hr. have been increased from 2.2 to 3.4, over 50%.

sion of parts into seven packages results in each package being easy to handle, in lower container costs and reduced man-hours and handling.

The chart below illustrates comparative packing costs for knocked-down mechanical cotton pickers before and after the adoption of wirebound crates for the six parts mentioned.

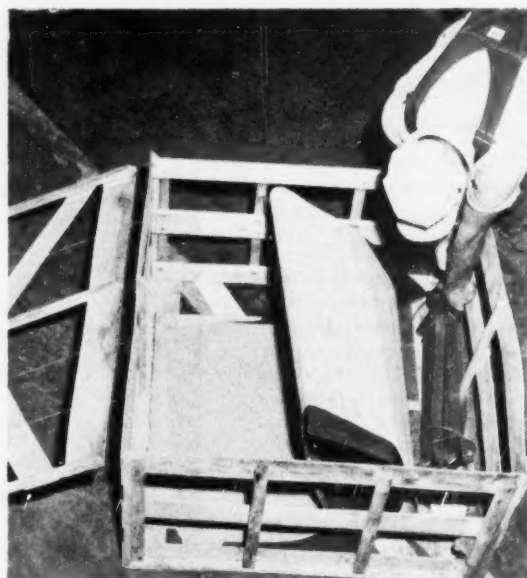
Part Packed	Weight Percentage Decrease in Container Cost		Tare Weights		Assemblies Packed per hour	
			old	new	old	new
Platform	150 lb.	38%	80 lb.	53 lb.	1.3	1.8
Basket Cover	147 lb.	24%	60 lb.	32 lb.	1.0	1.4
Conveyor Pipe	151 lb.	62%	110 lb.	36 lb.	1.27	2.0
Fan and Main Drive Housing	149 lb.	43%	75 lb.	46 lb.	2.2	3.4
Radius Rod Shield	152 lb.	67%	35 lb.	21 lb.	7.2	15.3
Drive Wheel Shield	146 lb.	36%	50 lb.	32 lb.	5.5	19.4

Thus, shipping container costs have been reduced as much as 67% (for the radius rod shield), tare weight has been reduced up to 68% (for the conveyor pipe) and the number of units packed per hour has increased as much as 240% (drive wheel shields). tions, per cotton picker, of \$12.88 or about 48% in container cost, and of 190 lb. or about 48% also, in container weight. Per 100 pickers, savings amount to \$1288 in shipping container costs and 19,000 lb. or nine and one-half tons, in container tare weight.

Less easily computed, but also important, are the appreciable savings that have accrued from easier and faster handling and the more profitable use of floor space formerly devoted to storing and assembling shoo. The wirebound crates are received completely pre-fabricated with the one-piece wirebound mats

flat, bundled and steel-strapped so that they are easily moved about in volume by industrial trucks. Container-ends are bundled and stacked separately.

Wirebound crates packed with cotton picker parts and ready for warehousing or shipment are placed on pallets and stacked. When shipped, six complete sets of seven crates constitute a carload. The tractors that provide motive power for the pickers are shipped on flat cars.

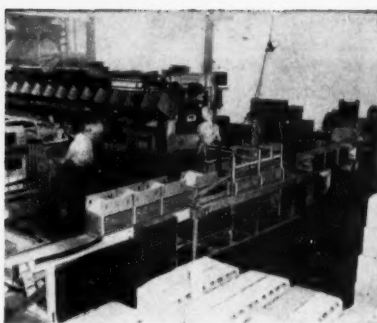


**WHEEL GUARD CRATE** has brought about a 36% saving in initial container cost, a reduction of 36% in shipping container tare weight, (from 50 to 32 lb.) and an increase from 5.5 to 19.4, or about 250% in the number of such assemblies packed in one hour.





THOR CORP., GLADIRONS



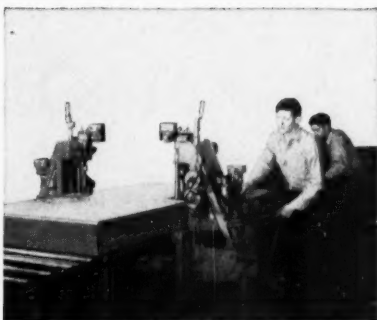
GARDEN GROVE, CITRUS FRUITS



UARCO, INC., BUSINESS FORMS



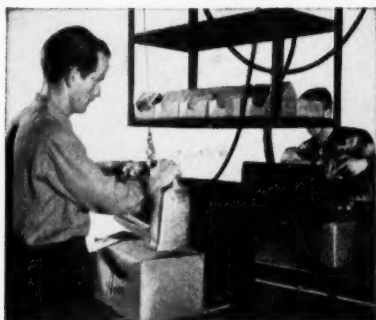
ENTIAT, APPLES



EXCELSIOR, BICYCLES



CANDYLAND, CANDY



AVON PRODUCTS, COSMETICS



HARRISON, STEEL CABINETS



PINNACLE, FRUIT PACKERS



## NINE WAYS TO CUT PACKAGING COSTS ...with international staplers!

Nine different companies . . . nine different problems. Yet, all of these companies found a common solution in the versatility, economy and dependability of International Stapling Machines. More than twenty different models, from simple and efficient hand operated portable models to the last word in completely automatic equipment, are available to meet *your packaging needs*. They have saved other companies from \$11,000 to more than \$28,000 per year . . . as high as eight times their cost.

**Check these advantages:** International staplers are fast ★ Staples do not hide ad copy ★ Safe, strong closures ★ Pilfer-proof closures ★ Save working space ★ Save manpower ★ Save material ★ and they meet shipping regulations.

Investigate these money and time saving "packaging experts" today! Write for bulletin C-201, 12 page complete line catalog, or tell us your special problems.

*the Royal Family of Packaging*



### International Staplers

International Staple & Machine Company  
808 East Herrin Street, Herrin, Illinois

Circle No. 164 on Reader Service Card for more information



WRAPS AND PACKAGES used on packages at left are greatly affected by heat and moisture. That's why . . .

## Humidity Conditioning Aids Packaging

**M**OISTURE-SENSITIVE packaging materials, such as cellophane, require rigidly controlled temperature and humidity conditions while in storage and during processing. Excesses in either temperature or humidity have definite effects on the quality of cellophane with a possible adverse effect on product quality and speed and efficiency of processing operations.

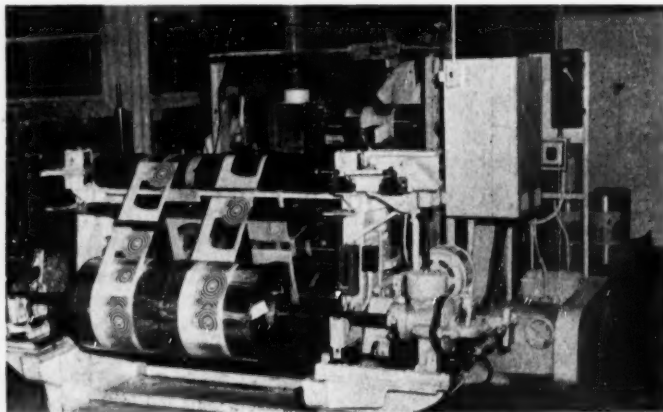
If cellophane is exposed to high humidities, mois-

ture will be absorbed at the ends of rolls, or edges of sheets, causing swelling and loosening. Conversely, when the humidity is too low, the material will lose moisture and will shrink. Low temperatures cause stiffening and embrittlement. These conditions disrupt production of the processing line, piling up expensive downtime or enforcing slower operation speeds.

*(More on page 112)*



**STORAGE AREAS** for packaging materials, whether in rolls or sheets, must be as closely controlled for proper humidity and temperatures as the processing areas where it will be used later.



**HIGH SPEED PROCESSING OPERATIONS**, such as slitting, require extra careful control of air conditions. High humidities cause swelling, low humidities cause packaging material to lose moisture and shrink and low temperatures cause stiffening and embrittlement. These conditions disrupt production, increase downtime, reduce speeds.

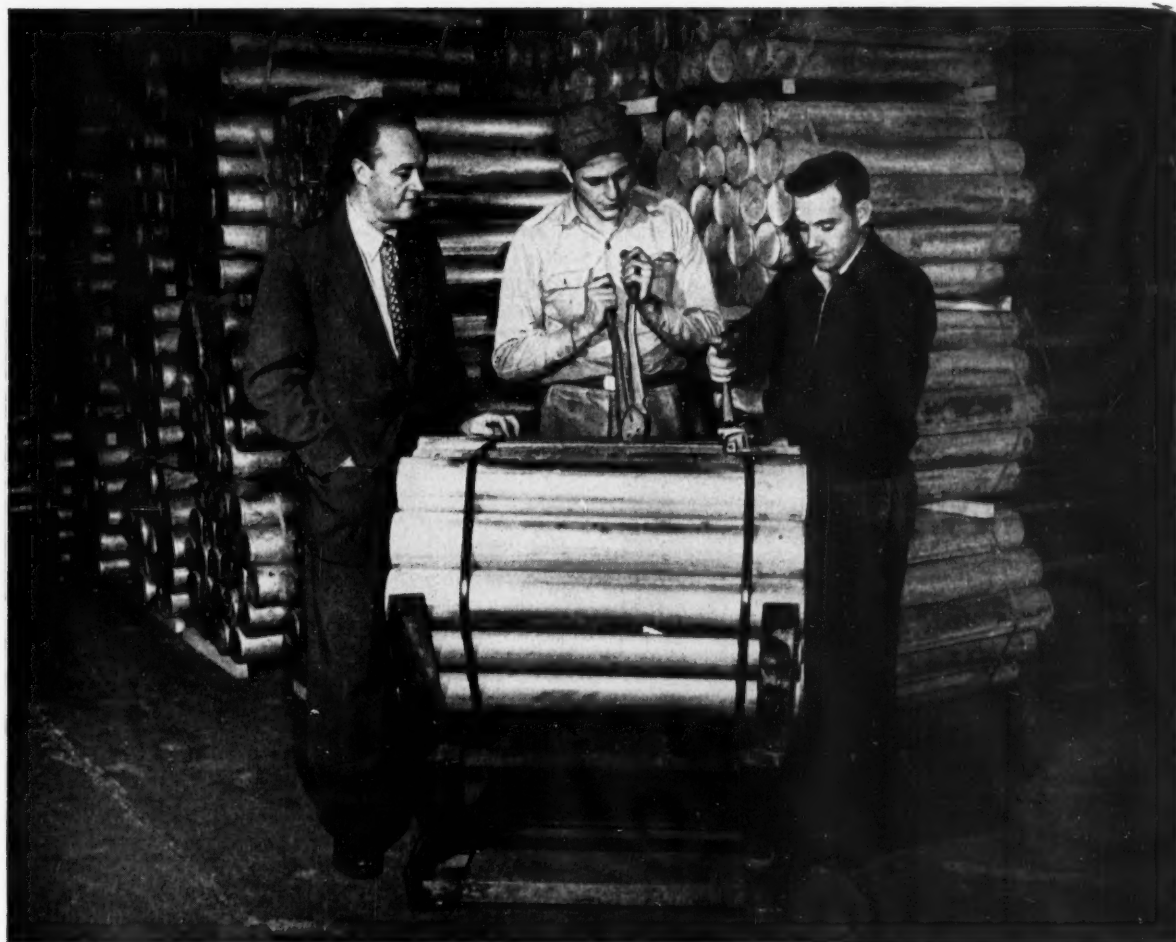


Photo courtesy Aluminum Billets, Inc., Youngstown, Ohio.

## NEED MORE FLOOR SPACE? How Brainard Strapping Service cut storage and shipping costs 50%

**T**HESE aluminum billets, formerly stored loose, are now steel-strapped into standard bundles which permit easy stacking and handling. Result—a large storage area reclaimed for production use, inventory-taking simplified, and storage and handling costs cut in half.

Key man in this accomplishment was Burdette Baker of Warren, Ohio, veteran Brainard salesman with 30 years of strapping service. With his experience and factory training in han-

dling and shipping methods, Baker was equipped to analyze the operation, make specific recommendations, and demonstrate *on the job*. Like other Brainard salesmen, Burdette Baker didn't sell strapping—he sold a more efficient method of handling and packaging materials.

Write us now for an analysis of *your* handling and shipping operations—it can lead to higher efficiency and substantial savings. Brainard offices located throughout the U. S. and in Canada.



**MYSTERY CAR?** No—this is Brainard's "Experimental Car", designed to take the mystery out of securing rail shipments properly. It's used to study special loading problems and to train Brainard salesmen in the best shipping methods.

It's another feature of Brainard Strapping Service.

**Brainard**

SHARON STEEL

STEEL DIVISION  
SHARON STEEL CORPORATION

For complete information write Brainard Steel Division, Dept. K-3, Griswold Street, Warren, Ohio.

## STEEL STRAPPING

Circle No. 17 on Reader Service Card for more information

At the West DePere, Wisconsin plant of Milprint, Inc., chemical type dehumidification is used to maintain ideal conditions within the storage and processing area. Milprint processes hyper-sensitive cellophane into smartly-designed cheese enclosures. All operations of this process are performed in one room, in which strict humidity and temperature conditions are maintained.

The material used is a copyrighted wax blend of

cellophane. During pouching, sheeting and die cutting operations, proper temperatures and humidity conditions in both the room and within the coated cellophane sheet as it has come to equilibrium with the conditions within the processing room are imperative. Excess conditions cause stretching or shrinkage which will throw off the accuracy of the cut-off in pouching and sheeting. Embrittlement of stock may also occur if room atmosphere drops in humidity.

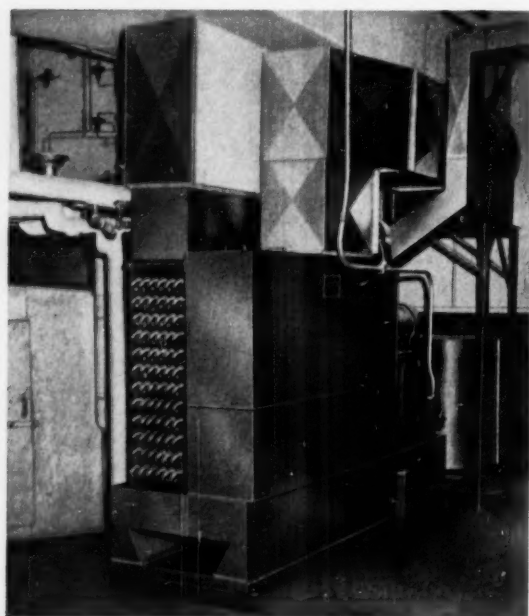
## Dehumidification Equipment Protects Cellophane

The serious need for employing ideal temperatures and humidities led to the installation of a chemical liquid absorbent-type air conditioning system at Milprint. The system supplies a total of 15,000 cubic feet per minute of air at 72°F, 77 grains of moisture per pound in the cheese room.

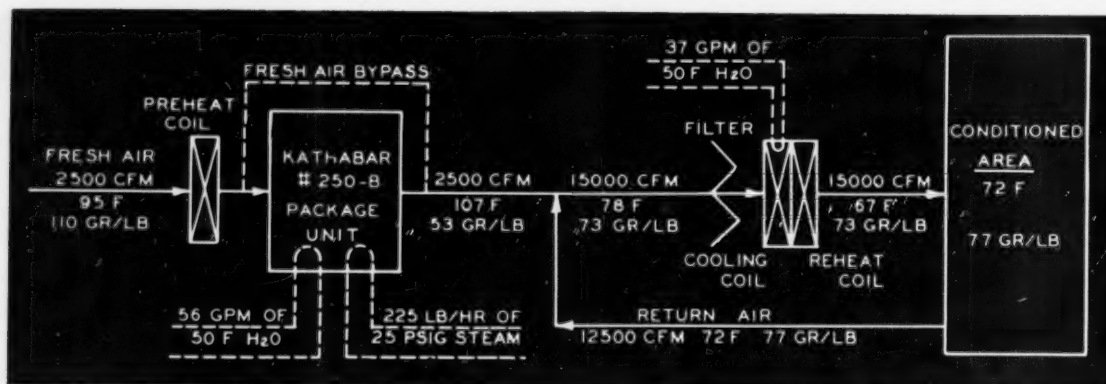
To supply dry air to the room, a single 2500 cubic foot per minute Kathabar humidity conditioning unit is used. At maximum conditions of 95° F and 110 grains of moisture per pound, 2500 cubic feet per minute of fresh, make-up air is used in the system. A preheat coil is situated in the fresh air line for winter operation. When the outside temperature condition falls below 45° F, the preheat coil begins to function. A by-pass around the unit opens and the Kathabar shuts down.

At maximum conditions, the make-up air enters the dehumidifier with a moisture content of 110 grains and leaves at only 53 grains per lb. Upon completing the dehumidifying pass, the conditioned air at 107° F, 53 grains per pound is mixed with 12,500 cubic feet per minute of recirculated air at conditions of 72° F and 77 grains per pound. This mixing produces 15,000 cfm of air at 78° F and 73 grains per pound. The air is then filtered, heated or cooled as needed and de-

(Continued on page 120)



**AIR CONDITIONING UNIT** used at the West DePere, Wisc. plant of Milprint, Inc. It rigidly controls temperature and humidity conditions and protects quality of packaging materials . . . permits faster processing.



**SCHEMATIC FLOW DIAGRAM** of the Kathabar, chemical-type dehumidification system installed at Mil-

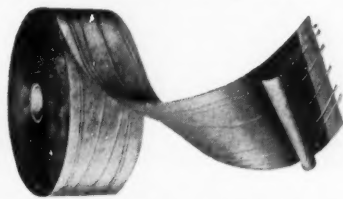
print. Ideal operating conditions (72° F and 77 grains per lb of air) are maintained automatically in the area.



# Which of these PACKAGING IDEAS will cut *your* costs?



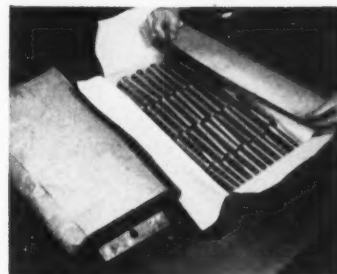
Center-seam sealing with Snake Tape saves time. Free Sample!



Protective papers for industrial, building and farm needs since 1895. Distributors in Principal Cities.

Circle No. 7 on Reader Service Card for more information

FLOW • MARCH, 1954



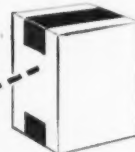
## Vapor-from-Paper STOPS RUST

Saves greasing. Saves degreasing. It's Angier's *proven* vapor rust preventative —VPI® Wrap. Easiest, *sure* way to store or ship your metal products. Check below for FREE sample & facts.



## A Better Way to Wrap Coils

Angier's creped spiral wraps protect coils and straight lengths from oil, rust, moisture, abrasion. You'll do the job *faster* on our spiral wrap machines. Check below for FREE sample & facts.



Center-seam sealing  
with SNAKE TAPE  
saves time

Now reinforced Snake Tape seals the center seams of cartons at Stoeger Arms Corp. These 35 lb. cartons of books are sealed two-thirds faster than before. Yet, the closure is *stronger*, thanks to Snake Tape's strap-like strength.

Where can *you* use this strong, water-proofed tape? Choice of six widths!

Center-seam sealing is accepted for parcel post, railway express, air express, and truck shipments; it also is accepted for carload and LCL rail shipments where rule 5, section 1 (c) of Uniform Classification applies.

Check below for FREE sample & facts.

ANGIER CORPORATION  
Framingham 13, Massachusetts

I want information and samples of:

- ☐ Angier spiral wrapping.
- ☐ Angier VPI Wrap.
- ☐ Angier reinforced Snake Tape.

NAME  
(Sign and attach coupon to letterhead)



## Customers now demand strapped pallets that cut shipper's cost 50%!

**A Signode unitizing method that can work for you!**

Signode's Packaging Engineers have an uncanny way of adapting basic *unitizing principles* to help shippers cut packaging costs!

These products are hard-to-pack grinding wheels. Manufacturers formerly shipped them in wooden boxes—4 wheels to the box. Signode Engineers bundled four stacks of 6 wheels with steel strapping and bound them into ONE easy-to-handle pallet of 24 wheels—at a 50% saving in packaging costs!

This Signode-developed pallet pack proved so popular that customers of almost all grinding wheel makers have requested that wheels must now be shipped on steel strapped pallets!

If you are interested in cutting packaging costs in your own plant, send for our folder showing 6 BASIC WAYS OF UNITIZING.

# SIGNODE Steel Strapping Co.

2618 N. Western Ave., Chicago 47, Ill.

In Canada: Canadian Steel Strapping Co. Ltd., Montreal • Toronto  
Offices coast to coast—Foreign Subsidiaries and Distributors World-Wide

Circle No. 123 on Reader Service Card for more information

Underpass Drops

## Beats

What would you do were a major highway project to threaten permanent separation of your loading dock and your plant? Here's what was done by Eckhart Seed Co. of Salinas, Calif., when it was faced with just that problem.

Eckhart's plant stood on one side of route 101. On the other side was its receiving and loading dock, next to the Southern Pacific railroad tracks. As long as the highway was a two-lane road, the company could cart its grain bags and other deliveries from plant to loading platform, despite some inconvenience.

The highway is one of two principle links between San Francisco and Los Angeles, and the increasingly heavy traffic serving the two cities became a serious problem. Plans were drawn up to expand the road into a four-lane, divided high-speed freeway.



CONVEYOR BELT which runs under U.S. Route 101 connects the plant with the loading dock. The 30-inch belt is 220 feet long.

DIVIDED HIGHWAY separates the plant of Eckhart Seed Co., left, from its loading dock, right. The problem was solved by a tunnel conveyor run beneath the road.

Overhead . . .

## Shipping Roadblock

When the California State Division of Highways decided to widen U.S. route 101 to a four-lane super-highway, it was like putting a 12-foot wall between Eckhart Seed Co.'s plant and its shipping dock. Here's what was done.

To the seed company, this highway improvement would mean the closing of its service road by fencing it off from the freeway on either side. The plant and loading platform would be as effectively divided as if a twelve foot wall had been erected between them. From now on, it would be necessary to send a truck at least 1/4-mile down one side of the road to an established crossroad, then back another 1/4-mile unless another solution could be found.

The solution which was finally worked out involved tunneling under the highway during construction, and installing a conveyor system to connect the plant and shipping platform.

Full length of the tunnel which was constructed is 198 ft. The belt conveyor is 30 inches wide and 220 feet long. It includes elevating extensions from the tunnel exits on either side of the freeway to the floors of each structure. It is reversible to permit material movement in either direction.

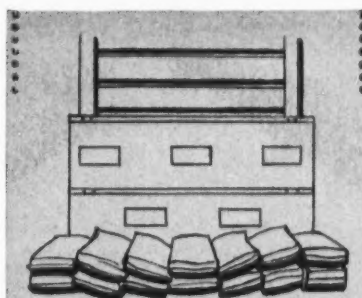
As a result of the conveyor, a half-mile trip has been eliminated. Loading and unloading of delivery trucks has been stopped, and it is no longer necessary to pile up small orders on either side of the road to await accumulation of a truck load.

*Courtesy, Armco Drainage & Metal Products, Inc.*



## Source of Profits in 1954 . . .

**... End of damage at car doorways...with Signode Retaining Strips!**



Bagged product in process of loading.

Take profits instead of losses this year by stopping car doorway damage with *Signode Retaining Strips*. It is being done now by more than 1500 shippers of bagged and cartoned commodities such as flour, canned goods, sugar, feed, chemicals, salt, and drugs!

*Signode Retaining Strips* permit through-car loading . . . save time of cooping crews . . . permit solid doorway loading . . . speed unloading . . . lower damage claims . . . build good will.

Whether you ship a few cars or many in 1954, it will pay you to find out about car doorway protection as a source of profits. Send for RETAINING STRIP FOLDER.



Workman tensions Duplex retaining strips outside car doorway after doorway is solidly loaded.



**SIGNODE**

STEEL STRAPPING CO.  
2618 N. Western Ave.  
Chicago 47, Ill.

Circle No. 124 on Reader Service Card

FOR *Job-tailored*

## STEEL STRAPPING CALL GERRARD

• U.S.S. Gerrard Steel Strapping is really made to fit the job. Whether you're reinforcing a parcel post package or a ponderous pallet of machine parts, there's a Gerrard tie in the size and type you need.

### ROUND ...

Gerrard's Round Steel Strapping is available in a complete range of sizes. The shape of the bundle doesn't affect the reinforcing, since dimensionally uniform Round Strapping conforms perfectly to irregular contours.

Both the hand-operated machines and the semi-automatic Q Model apply Gerrard's "twist knot" to Round Strapping.

And Gerrard Round Strapping costs about 40% less than any other metal reinforcement.

### ... OR FLAT

Gerrard Flat Steel Strapping is also made in a wide range of sizes, excellent for palletizing, unitizing, crating, and other heavy duty tying.

Easy-to-operate Gerrard Flat Strapping stretchers and sealers do the job quickly and efficiently—keep the bundle compact until it reaches its destination.

Make Gerrard your *one* source of supply for both Round and Flat Steel Strapping. You'll save in freight charges by combining shipments of both types of strapping in a single carrier. You'll save time and simplify your paper work too, by using a single purchase order for all your strapping.

Contact a Gerrard engineer, soon. He'll be glad to give you a complete rundown on the specific applications of Gerrard Steel Strapping. If you wish, he'll advise you, free of charge, about the tying method best suited to solve your production problem—safely and economically. Send for your free copy of the *Blue Book of Packaging*.

GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION  
2937 West 47th Street, Chicago 32, Illinois

# U.S.S. GERRARD

Round Steel **STRAPPING** Flat Steel

UNITED STATES STEEL

Circle No. 56 on Reader Service Card for more information





# WHAT'S NEW... in Packaging and Shipping Equipment

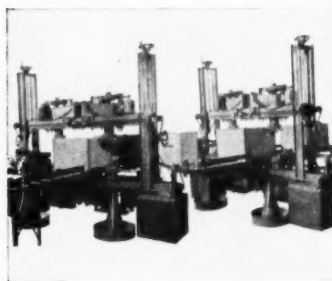
---



## Corrugated Container for Nails

Development of a corrugated paper shipping container for nails, nuts, bolts and other heavy products has been announced by Hinde & Dauch Paper Co. Called the Hevi-Duty Box, the new containers are already being used as nail kegs by several manufacturers. Cost of the box is said to be about half that of a keg. It weighs only half as much, and requires 25% less storage space in the warehouse.

Circle No. 189 on Reader Service Card for more information



## Plywood Box Assembler

An automatic assembler for plywood boxes has been introduced by Atlas Plywood Corp. A twin-machine unit, the assembler consists of one machine for fastening two sides (top and bottom) simultaneously, then revolving the box on a turntable for transfer to the second machine where the fastening operation is repeated on the remaining two sides. Standard steel stitcher heads are used.

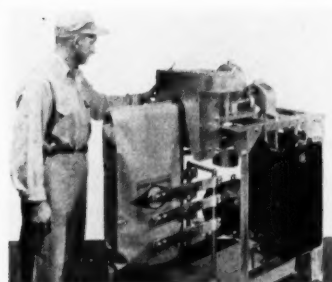
Circle No. 190 on Reader Service Card for more information



## Hydraulic Strapping Tools

Hydraulic stretching and sealing tools for centralized package strapping have been developed by Acme Steel Co. The equipment includes: a power unit; hydraulic stretcher and sealer; electrically powered band dispenser. The new tools are said to reduce operator fatigue . . . permit use of strapping directly from the coil, rather than in cut lengths . . . give uniform strapping tension.

Circle No. 191 on Reader Service Card for more information

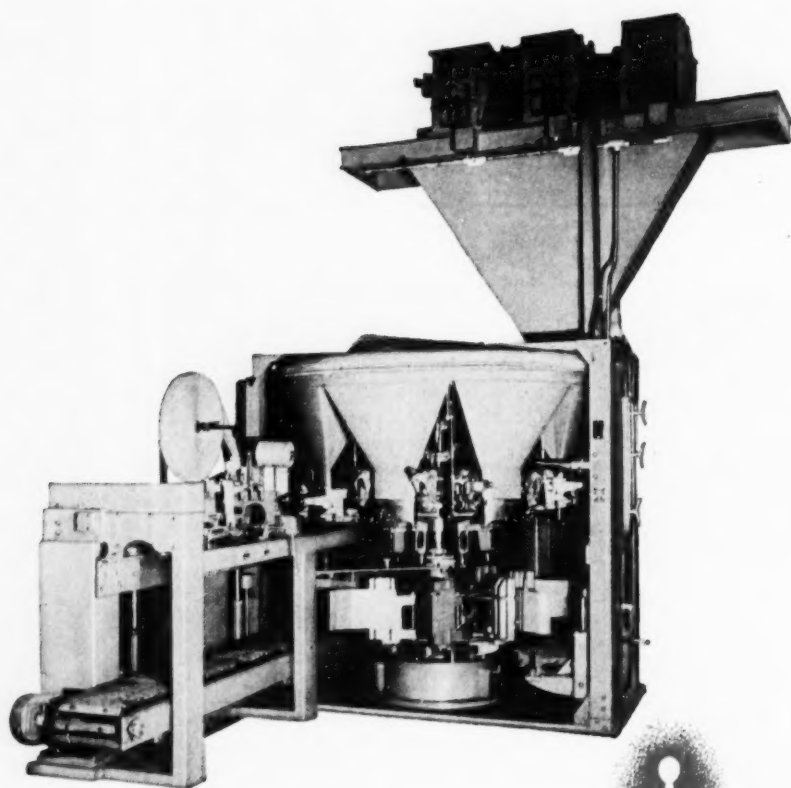


## Valve Bag Packer and Settler

Black Products Co. has developed a valve bag packer and valve-bag settler that is claimed to be new and unique. The packer automatically fills and weighs a bag to very close tolerances with extreme cleanliness while the settler, working during the filling operation, gives a package that is full and well formed. The device is said to make for economy in bag costs, easier handling, palletizing or storage. Complete details are available.

Circle No. 192 on Reader Service Card for more information

(Continued on page 130)



## Bagging 350 tons a day...with ONE operator!

Bagging large tonnage of free and semi-free flowing materials in Multiwall Paper Bags becomes a simple one-man operation with the Model "A" BAGPAKER.

The Model "A" will package up to 7000 one-hundred-pound bags per 8 hour day. It requires only one man to hang the empty bags on the filling spouts. Accurate weighing, filling, settling and sewing are all automatic.

The Model "A" BAGPAKER is designed and manufactured by Multiwall Bag experts for reliable day in and day out service. It will pay for itself in 1 to 3 years. Over 30 of these machines are now being used in industry. Complete details may be obtained by writing to BAGPAK DIVISION, International Paper Company, 220 East 42nd Street, New York 17, Dept. L-10.

  
**International Paper** COMPANY  
 BRANCH OFFICES: Atlanta - Baltimore - Boston - Buffalo - Chicago - Cincinnati - Cleveland - Dallas - Detroit - Kansas City - Los Angeles - Miami - Minneapolis - New York - Philadelphia - Pittsburgh - St. Louis - San Francisco - Seattle - Toronto  
 CANADA: The Commercial Paper Products Ltd., Montreal, Ottawa, Toronto  
**BAGPAK DIVISION**

Circle No. 73 on Reader Service Card for more information



WAREHOUSE SPACE is saved with the new corrugated box in use at Western Automatic Screw Co. Photo at left shows two stacks in a warehouse. Each pallet holds 21 kegs, but same pallet can hold 30 boxes. Boxes contain same weight of material as do kegs.

TWO PALLET-LOADS AT ONCE can be carried because of stability of rectangular boxes. Kegs were found to be unstable and difficult to handle.



## Storing Nails and Screws in . . . . 25% Less Space

Western Automatic Machine Screw Co., Elyria, Ohio is now shipping cap screws, nuts and screw products in a new corrugated container which has a low original cost, and saves weight and warehouse space. In addition, the new box is easy to assemble and handle, provides a flat surface for printing of sales

*Photos courtesy of Hinde & Dauch Paper Co.*

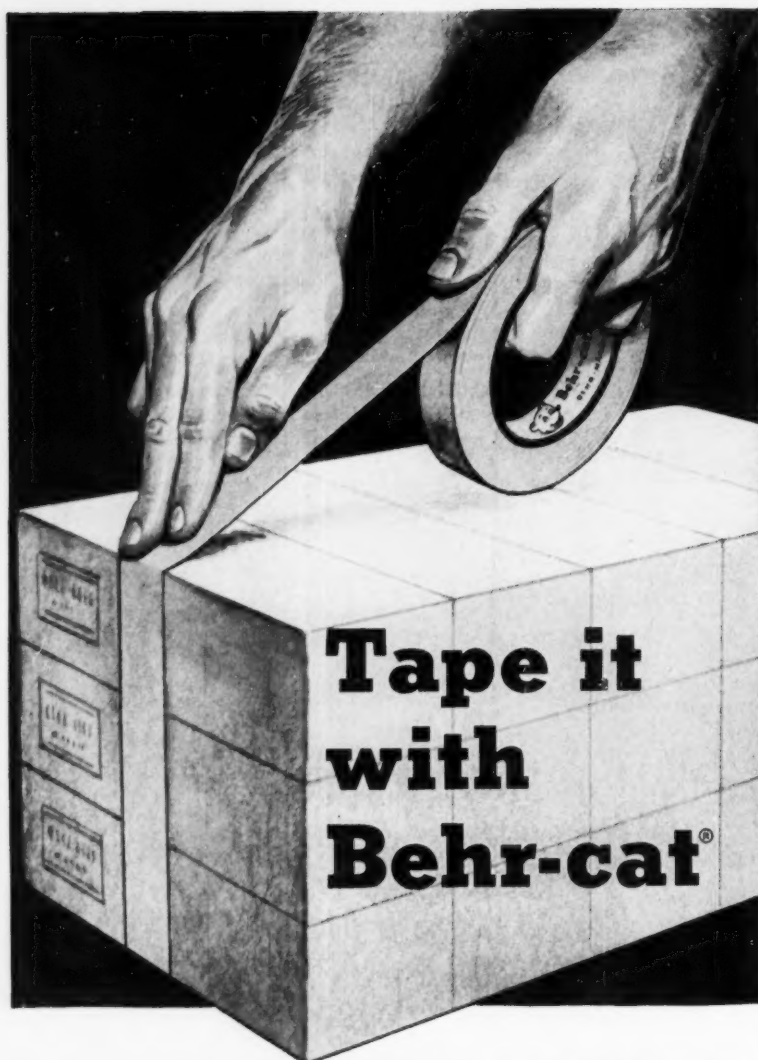


and identification matter, and simplifies inventory control.

The container (called the Hevi-Duty box by its manufacturer) is constructed with a weatherproof adhesive. Outside storage tests have shown that weather damage to contents is less than that found in kegs. The box is purchased in two flat sheets, properly cut and scored so that one sheet folds to become the bottom, the other a telescope top. With the exception of a wire cutter to snip the wire holding the two parts together, no special handling equipment is required. Gloves are unnecessary, and splinters are eliminated.

In the warehouse, the new box takes up to 25% less floor space. A pallet which holds 21 kegs can be used to store and transport 30 of the new boxes, each of which holds the same weight as one of the kegs.

BROKEN CONTAINERS and spilled contents have been practically eliminated by the wire-tied corrugated box. Containers shown at left were both dropped from the same height to illustrate their comparative abilities to withstand shock. The new box was only dented.



*...to speed packing and shipping*



Fast application makes strong, filament-reinforced, pressure-sensitive BEHR-CAT Strapping Tape the modern, cost-cutting method of wrapping, packing and bundling. Use it and save all over the plant.

Behr-Manning Corp., Troy, N. Y.

In Canada: Behr-Manning (Canada) Ltd., Brantford.  
For Export: Norton Behr-Manning Overseas Inc.,  
New Rochelle, N. Y., U. S. A.



division of NORTON Company

▲ COATED ABRASIVES  
▲ SHARPENING STONES  
▲ PRESSURE-SENSITIVE TAPES

T-2

## HUMIDITY CONDITIONING

(Continued from page 112)

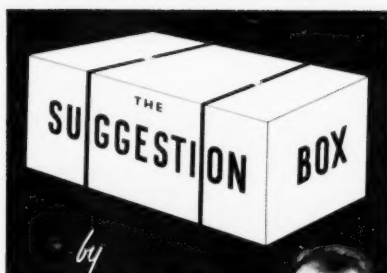
livered to the cheese room at conditions of 67° F, and 73 grains per pound. The internal latent and sensible loads within the processing area account for the temperature and grain content increase to the ideal room conditions of 72° F and 77 grains per pound.

### Operation of the Dehumidifying Unit

Air to be conditioned passes through an air washer to contact a lithium chloride-base absorbing solution. At the same time, both air and solution pass over cooling coils. The cooler the absorbent, the greater is the moisture-holding capacity. In this installation, 56 gallons per minute of 50° F water are used. These cooling coils, therefore, control the temperature of the solution and in turn, the moisture-retaining capacity of the absorbent. Once the leaving air moisture conditions are set, automatic controls regulate the quantity of coolant flow so as to effect steady and continuous operation no matter how entering conditions may vary.

Intermittently, a small quantity of the now moisture-laden absorbent passes automatically into there generator, where it flows over low pressure steam coils. As the solution is heated, its moisture-retaining capacity is reduced, and excess water in solution is driven off and exhausted to the atmosphere. Once again at its proper concentration, the absorbent solution is returned to the air washer section for further dehumidifying passes. No manual controls are necessary in the entire operation once the equipment is started. Regeneration at Milprint is accomplished with 225 pounds per hour of 25 psi steam. Moisture is purged from the air conditioning system at a rate of 264 gallons per day.





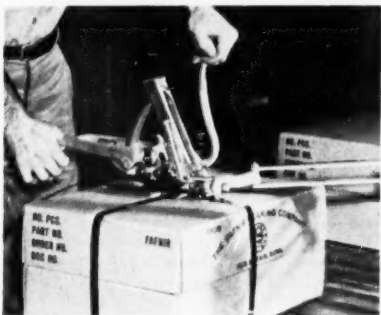
**STANLEY  
THE STEEL STRAPPING  
SPECIALIST**



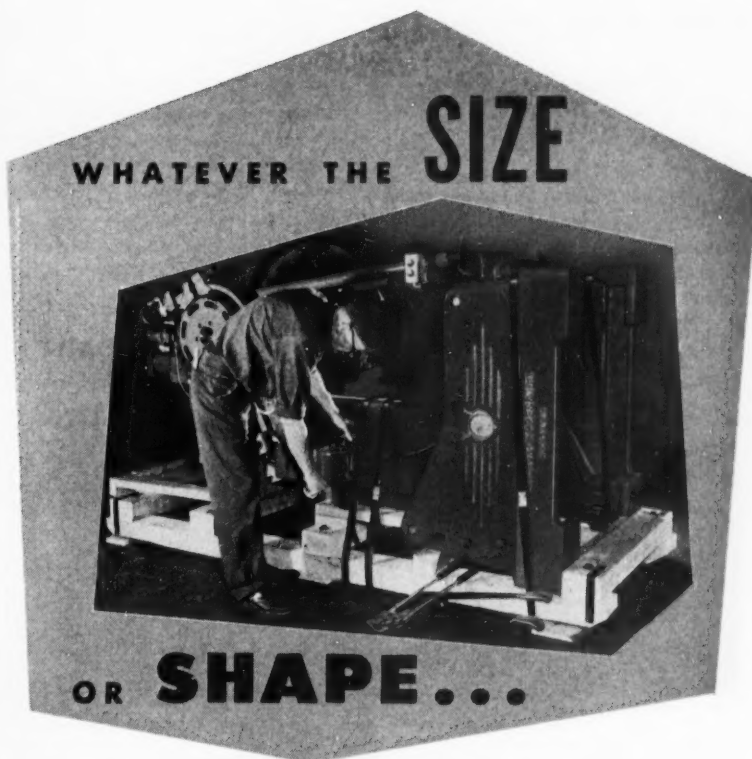
I can show you how STANLEY Steel Strapping and STANLEY Engineered Tools can help you lick your tough packing, shipping and storage jobs . . . cut materials handling time . . . lower your costs. Call on me for the answers to your problems. In the meantime, here are two profit-building ideas.



This job is now being done in less time with less effort . . . thanks to the STANLEY POWER STRAPPING MACHINE, designed especially to reduce the number of operations in packing and shipping . . . keep your production lines moving on schedule.



"A jewel of a tool!" — so packing and shipping men have said for over 25 years . . . does a superior job of strapping boxes, cartons, coils, etc. Light . . . fast . . . easy to load and operate. Put the STANLEY ACE to work for YOU!



**STANLEY**

**STEEL STRAPPING  
will pack it quickly . . .  
and at LOW COST**

Whether your product is small or bulky, light or heavy, of regular or irregular shape, STANLEY Steel Strapping can give you one important answer to management's demands for greater cost savings in packing and shipping —

It will pay you to have your STANLEY Steel Strapping Specialist show you how to build modern, dollar-saving efficiency into your present materials handling operations.

Mail coupon TODAY for your copy of the FREE booklet "Keep Your Production Lines Moving!"

**STANLEY**

**INSURE IT — SECURE IT WITH STANLEY STEEL STRAPPING**

**STEEL STRAPPING**

**DIVISION**

**THE STANLEY WORKS, 2023 LAKE STREET, NEW BRITAIN, CONN.**

Telephone: BALDWIN 9-2021

☐ Please send booklet

☐ Please have representative call

Name \_\_\_\_\_

Position \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_

State \_\_\_\_\_



STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS  
STANLEY STEEL STRAPPING • STANLEY STEEL

Circle No. 175 on Reader Service Card for more information

## STITCHING & STAPLING . . .

(Continued from page 106)

over steel strapping and stapling over round wire binding on crates. Other machines of this type are used for holding parts of wood crates together during the assembly of the crate.

Machines in the group, called "clinch type without anvils", are designed to drive pre-formed

staples through two pieces of corrugated board and cause the legs of the staple to clinch together without the use of the anvil. The "clinch types with retractable anvils" perform the same function, but accomplish it by using small anvils which pierce the corrugated board and retract after the staples have been clinched. The anvils pierce the container in such a way that they do not injure the contents. With the anvil underneath the inside flap of the

carton, it is possible for the staple to penetrate both flaps and clinch on the inside giving a tight closure. The two types of machines just discussed are designed primarily for closing tops and bottoms of regular slotted cartons and other types of cartons after filling.

A plier type machine has been designed recently which dispenses either by hand or by air, a round loop of wire referred to as a "hog ring". The rings have been used to great advantage in closing filled bags made of vinyl, paper cloth, burlap and other materials.

### Specialized Industry

Since the introduction of the hog ring machine and many other special devices, the stapling machine industry has become highly specialized. Small wonder, then, that the questions, "Which machine will do our job most efficiently?", or "What machine can we get to do our particular job?", or "What manufacturer will adapt a stock machine to meet our particular requirements?", are being voiced with greater frequency. The same thought and care should be devoted to the purchase of stitching and stapling equipment as is devoted to the selection of containers and packaging materials. The right machine can help you achieve economical packaging and insure that your product will reach the customer safely.

A final word of caution . . . when in doubt, don't guess. Skilled, specially-trained manufacturer's representatives are available in most parts of the country to answer any questions which might come up. It is another way to insure that you are taking full advantage of the many devices available.

\*Wendell W. Gibson is sales manager of Alles Corp.

FLOW's thanks to the following companies for their help with the preceding survey: Acme Steel Co.; Alles Corp.; Bostitch; International Staple & Machine Co.; Fastener Corp.; Powers Wire Products Co.

## B-G FOR SAFE HANDLING AND SHIPPING



MODEL A

Pallet Box is easily attached to any standard pallet by means of 4 corner irons and flat or round steel strap. Collapsible for storage and return shipment.



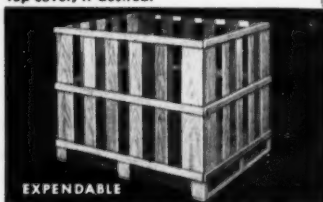
MODEL C

B-G Collapsible, hinged pallet box with drop-leaf panel for greater accessibility. All B-G pallet boxes can be furnished with top cover, if desired.



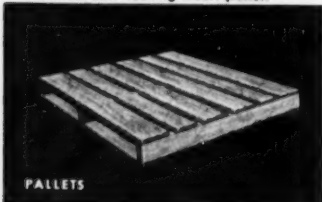
MODEL B

This collapsible pallet box has front opening for easy access to contents when stacked or in racks. Furnished with or without self-latching insert panel.



EXPENDABLE

B-G expensible pallet box, designed to withstand specified loads. Inexpensive, permitting discard after usage. Top cover, if desired.



PALLETS

Hardwood pallets made in all sizes and styles. Nailed with cement-coated drive screws.

For greater strength in stacking, materials handling and shipping, use Bigelow-Garvey Tight-Corner Collapsible Crates and Pallet Boxes. Designed to withstand transportation and handling hazards, B-G containers are extra strong for stacking and ideal for storage. Shipped in two or three sections. Fully assembled. Pre-drilled nail holes enable quick packing. Let us design sample container to meet your requirements.



TIGHT  
CORNER  
CRATE

The collapsible crate with the exclusive B-G Tight-Corner Hinge. Offers unusual rigidity and strength, yet light in weight. Easily assembled. Nail holes pre-drilled. Made up in 3 parts. Shipped collapsed.

30  
Y  
E  
A  
R  
S  
P  
A  
C  
K  
A  
G  
I  
N  
G  
E  
X  
P  
E  
R  
I  
E  
N  
C  
E



Tight Corner  
Hinge Crate



Wooden  
Pallets



Model A  
Pallet Boxes



Model B  
Pallet Boxes



Model C  
Pallet Boxes



Kraft  
Crate



Wooden  
Boxes



Six Section  
Panel Crates

MILLS:

ARKANSAS

GEORGIA

WISCONSIN

MINNESOTA

ILLINOIS

always check



Write for complete details and prices to...

**BIGELOW-GARVEY**

lumber company

General Office and Laboratory

326 W. HURON STREET • CHICAGO 10, ILLINOIS

Phone  
Whitehall  
4-5252

Circle No. 16 on Reader Service Card for more information

## What's New . . .

in Packaging & Shipping  
Free Literature

### Shot-Blasted Drums:

Literature from Rheem Manufacturing Company describes the firm's steel drums which are shot-blasted to remove all contaminating scale. The drums are then scrubbed, leveled, chemically treated to prevent rust and then roller-coated with a baked-on coating for cleanliness and durability.

Circle 193 on Reader Service Card

### Fills Stapler Needs:

Powers Wire Products Company offers a 4-page bulletin describing its hand and air-operated staplers. Together with brief descriptions of the equipment, case studies illustrate on-the-job uses of the staplers.

Circle 194 on Reader Service Card

### Foil Beverage Labels:

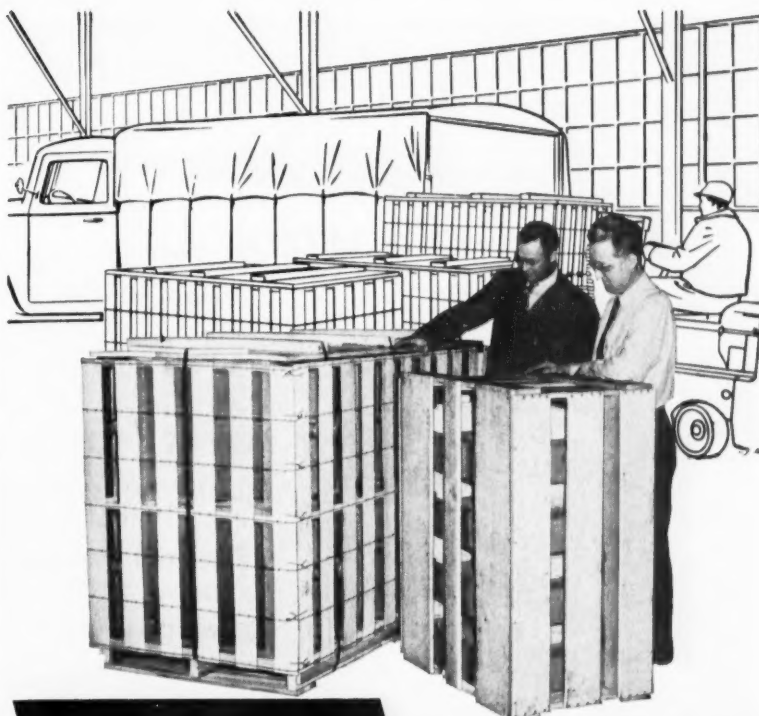
"Foil Beverage Labels" is a 43-page booklet available from Reynolds Metals Company, and it was compiled to include information and data for label designers, label manufacturers and bottlehouse supervisory personnel to better acquaint each with the characteristics of aluminum foil labels. Numerous photos and line drawings accompany the text.

Circle 195 on Reader Service Card

### Cost-Saving Strapping:

The current issue of Confab, Acme Steel Company's quarterly publication, carries illustrated descriptions of the latest cost-saving applications of steel strapping and wire stitching. The new arcuate method of wire stitching is also explained. Featured is an editorial by Fred M. Gillies, president, in which he points out how careless freight car unloading costs the railroads millions of dollars annually.

Circle 196 on Reader Service Card



1 generalift pallet crate

replaced 6 heavy nailed crates

cut packaging costs **50%**

reduced shipping costs **25%**

McCord Corporation, Plymouth, Indiana, solved both a packaging and a materials handling problem with the Generalift Pallet Crate shown above. Conferences with General Packaging and Sales Engineers produced a crate which held 24 radiators, packed easily, and could be handled by fork-lift from the shipping room all the way to assembly lines. It formerly took 24 heavy nailed crates and from 24 to 30 hours of labor to ready 96 radiators for shipment. Packing the same number in Generalift Pallet Crates takes only 4 hours.

This is only one example of the many packaging problems solved every day—at a saving—in General Box Company's two fine Industrial Packaging Laboratories. General Box packaging experts stand ready to help *you* cut packaging costs, too. Write for complete details.

Find out how other manufacturers are cutting packaging costs. Write for your free copy of "The General Box."



**General Box**  
★ ★ ★ ★ ★

**COMPANY**  
1857 Miner Street  
DES PLAINES, ILL.


Factories: Cincinnati; Danville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston, Texas.

ENGINEERED SHIPPING CONTAINERS FOR EVERY SHIPPING NEED

- Generalift Pallet Boxes
- Corrugated Fiber Boxes
- All-Bound Boxes
- Cleated Corrugated and Watkins-Type Boxes
- Wirebound Crates and Boxes

Circle No. 54 on Reader Service Card for more information

**BLACK DIAMOND  
VALVE BAG**



Packer and Settler may be purchased as separate units

# packer & settler

FOR A **BETTER** PACKAGE...

investigate this new, sensational combination of automatic controlled weight valve bag packer and settler.

**EASIER HANDLING  
& PALLETIZING  
CLEAN—NO DRIBBLE  
ACCURATE  
ECONOMICAL  
PERFORMANCE  
GUARANTEED**

For further information, write  
**BLACK PRODUCTS COMPANY**  
 13513 Calumet Ave., Chicago 27, Illinois • Dept. P34  
MANUFACTURERS SINCE 1912

## Pressure-Sensitive Tape Dispenser:

Air-operated pressure-sensitive tape dispensers are detailed in literature available from Air Fixtures, Inc. The dispensers are said to be able to handle all types of pressure-sensitive tapes, and are foot-operated to permit operators to use both hands for tape application.

Circle 197 on Reader Service Card

## Pillowed Packaging:

Packaging which is claimed to bring your breakage figure down to practically zero is described in literature offered by the Curled Hair Division of Armour and Co. A four-page bulletin describes that company's Hairflex, a rubberized curled-hair cushioning material. It can be die-cut to fit special shapes to fit the requirements of any product or package, and is supplied in sheet, roll and die-cut stock. The material is available in a variety of densities and thicknesses.

Circle 198 on Reader Service Card



**A.** HANDY A FOUNTAIN STENCIL BRUSH  
Natural Grip. Push-Button Ink Control.

**B.** STENCIL INK Easy-Flowing. Black and Colored.

**C.** CLIP-A-TAPE Moistens, measures, cuts up to 3-ft. Gummed Tape in  $\frac{1}{4}$  Second!

**D.** STENCIL BOARD Clean-Cutting, Long-Lasting.

# IDEAL

**EQUIPMENT  
FOR YOUR  
SHIPPING  
DEPARTMENT**



**IDEAL STENCIL MACHINE**  
Exclusive Automatic Carriage. Minimum Margin Grip. Three Popular Letter Sizes.

**FREE SHIPPING GUIDE!** Important time and money saving hints for your shipping department. Fully illustrated. Write for your copy today!

**IDEAL**  
STENCIL MACHINE CO.

104 Iowa Ave., Belleville, Illinois

Circle No. 71 on Reader Service Card for more information

## "Handy Helper":

"Your Handy Helper" is a 60-page catalog available from Diagraph-Bradley Industries, Inc. It contains information on the care of stencil cutting machines, label gummers, wire stitching machines, carton printers, gummed tape machines, etc. Also has complete metric conversion tables, export directions and stitching wire data.

Circle 199 on Reader Service Card

## Package Engineering:

Container Laboratories, Inc., offers an illustrated booklet describing its services and facilities. Services include: container and material testing, plant surveys, packaging research, package design, quality evaluation programs, consultation and special services.

Circle 200 on Reader Service Card

## Unique Container Material:

Weyerhaeuser Timber Company offers literature describing Ply-



Veneer, said to have all the desirable features of wood boxes and fiber cartons, with none of the disadvantages. It is made with a mechanically distended inner core of Douglas fir veneer faced with kraft containerboard on both sides.

Circle 201 on Reader Service Card

#### Impact Recorders:

Literature from The Impact-O-Graph Corp., entitled "How Much Does a Jolt Cost?", points out that jolts and vibrations are costly to shippers and carriers. The company further explains that in order to correct damaging jolts, the causes of them must first be traced to their source. The impact recorders which ride with the shipment and provide a running record of every jolt or impact are illustrated and described.

Circle 202 on Reader Service Card

#### Tape Printer:

American Tape Printer Company offers literature on "The Tape Printer" which prints or codes guntape. Because it is self-inking, more than a thousand impressions can be made without re-inking, and up to 12 inches of copy may be printed.

Circle 203 on Reader Service Card

#### All About Foil:

"How, Why and When You Should Consider Protective Packaging With Plain Aluminum Foil" is the title of a booklet from Reynolds Metals Company, and covers pretty thoroughly what the booklet contains. Samples of the foil are included, as well as price lists and some of the specifications for methods of packaging parts and assemblies for the military.

Circle 204 on Reader Service Card

#### Waterproof Paper:

Literature from Angier Corporation describes Glass-Wrap, a reinforced waterproof paper. Non-deteriorating glass fibers are swirl-blown to resist tears from all directions. Its edges feature parallel reinforcing, and is available in widths up to 96 inches. Its features and suggested uses are listed.

Circle 205 on Reader Service Card

## WHY SO MANY COMPANIES ARE NO LONGER USING LABELS OR BRUSH-STENCIL



*New WEBER SYSTEM for addressing shipping containers does job faster, more accurately, at much less cost*

Pictured above is a system that is now accepted as the most efficient method of addressing or marking containers. Time and cost studies taken by present users prove its superiority in speed and economy over less modern methods. It's the Weber Direct-To-Container System.

The cartons have been pre-printed with a label frame by the carton manufacturer. The ship-to address is printed inside the frames at the rate of 40 to 50 cartons per minute with a Weber RJ-1 Hand Printer. (Carrier associations enthusiastically

approve the sharp, waterproof, fade-proof print).

The RJ-1 prints from an inexpensive stencil that can be typed individually or with bill-of-lading or invoice forms as described below. It has a reservoir that holds enough ink for 7,500 to 10,000 prints. Can be supplied with one or two counters for count control.

Find out more about this efficient system for addressing and marking your shipping containers. Send for the folder offered in the coupon.

*another*

**Weber**

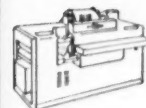
*system*

Weber Label and Marking Systems  
Div.—Weber Addressing Machine Co.  
Mount Prospect, Illinois

#### SHIPPING PAPERWORK SIMPLIFIED



Typist sticks Tab-On Stencil to form over the "Ship To" area. In one typing, form and stencil are prepared with ship-to address. Stencil then goes to shipping.



Continuous-form, marginal punched stencils are also available. Can be cut on automatic tabulating equipment, electric or manual typewriters.

MAIL THIS COUPON for more information on the Weber Direct-To-Container System

COMPANY \_\_\_\_\_

INDIVIDUAL \_\_\_\_\_ TITLE \_\_\_\_\_

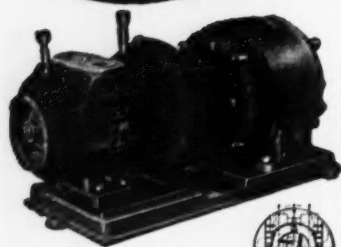
ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

WEBER LABEL AND MARKING SYSTEMS • Dept. F-8 • Mt. Prospect, Illinois

Circle No. 144 on Reader Service Card for more information

## NEW KRAISSL AIR PUMPS for SUCTION and PRESSURE



### Eliminate Oil Vapors from Discharged Air

The new Kraissl Class 23 pumps completely eliminate undesirable oil vapors from discharged air. In many operations, this means a tremendous saving to you—in time, materials and industrial health. Pumps are dry lubricated—displacement blades take up their own wear. Positive, fan-cooling for continuous high performance. Available with double extended shaft for group installation from single power source. Performance data: 1750 RPM, but not limited to this speed. Capacities from 5 cfm—20 cfm, for single units; larger capacities by group drive.

Kraissl Class 23 pumps are specifically designed for all packaging and printing machinery; and similar applications where air pressure or suction, without discharge oil, is preferable.

- Suction feed or pick-up of paper, cardboard tin, etc.
- Container-filling: bags, bottles, tubes, etc.
- Automatic handling on conveyor systems
- Packing in shipping crates and cases
- Printing presses and vacuum printing frames, casting boxes and dusting tables
- Vacuum canning machines
- Vacuum holding chucks
- Ideal for handling food products, beverages, pharmaceutical preparations—where rigid sanitation standards are mandatory.

### FREE

Write today for our new bulletin A-1399  
Use this handy coupon

Kraissl Co. Hackensack, N. J.  
Please send your bulletin A-1399

Name

Company

Address

City  State

**KRAISSL CO. Inc.**

292 Williams Ave., Hackensack, N. J.

Circle No. 78 on Reader Service Card

126

## SALES FIELD . . .

(Continued from page 18)

Wes Ower has been appointed sales manager at Irving G. King & Company, Los Angeles. Announcement was made by T. A. Fitch, general manager. Mr. Ower, who has been with the firm for 13 years, will assist in sales of the company's general line of material handling equipment.



W. Ower

W. E. Cleaves, General Sales Manager of Bendix Radio Communications Division, has named J. William Montgomery as Communications Engineer for the company. From Baltimore, Ohio, Montgomery has

been with Bendix for five years, and was formerly assistant to the mobile sales manager. He will handle the sale of mobile radio equipment in Ohio, Western New York State and Western Pennsylvania.

Announcement was recently made by the Easiquip Company, Los Angeles, of the appointment of John Gilliam Equipment Co. as exclusive sales representatives in Texas, Oklahoma, Arkansas and Louisiana. Located in Dallas, Texas, the company was originated by John Gilliam and Harrison Durrett, and formerly operated under the name of Materials Handling Equipment Sales-Engineers.

New Chicago Regional Manager for the Lamson Corporation is H. P. Hejmanowski. In this position, he will be re-

Easy to use . . . Easy to clean  
... Easy to service



## DERBY SEALER

## MODEL 32 GUMMED TAPE DISPENSER

For Shipping Room and Production Line Packaging

• Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months, when machines tend to "gum-up."

• The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.

• Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.

• Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

For further information, write Dept. F

**DERBY SEALERS, INC.**  
Derby, Connecticut



Circle No. 40 on Reader Service Card for more information

FLOW • MARCH, 1954

sponsible for the sales and engineering of the Chicago, Kansas City, St. Louis, Dallas and Houston districts. Hejmanowski was formerly an Engineer with the company, and prior to that time was affiliated with Link Belt Company.

**Magcoa** sales representatives for North Carolina have been announced as **Industrial Truck Sales and Service Company**, Greensboro. Walter R. Gow, dealer manager, issued the notice.

William C. Portman, Sales Manager of **The Chas. Wm. Doepke Manufacturing Co., Inc.**, announced the appointment of **James A. Cassidy** as exclusive representative in the Syracuse area.

Recent Agency appointments of **Silent Hoist & Crane Company** are: **Baker-Lull Associates**, Glenside, Pa.; **Hamer-slag Equipment Co.**, San Francisco, Cal.; and **W. D. Matthews Machinery Co.**, Auburn, Me. News comes from Emanuel Jacoby, Advertising Manager.

Facilities of **John R. Banbury Equipment Company**, Pittsburgh, Pa., have been expanded

In its February issue, **FLOW** inadvertently neglected to give credit to two companies which provided valuable help for articles which ran in the Packaging and Shipping Section.

The Packaging and Shipping Idea of the Month on page 111 was through the courtesy of **Gaylord Container Corp.**, manufacturer of the corrugated boxes shown.

The article, "Safe Shipping Method for Easily Damaged Material" which started on page 130 was through the courtesy of **Evans Products Co.**, manufacturer of the Evans DF-Loader.

**Multiply**

SALES



**Add**

PRODUCT APPEAL



**Subtract**

SHIPPING LOSSES



Write for free booklet,  
"How To Use Color On Corrugated Boxes,"  
Hinde & Dauch, Sandusky 30, Ohio

**HINDE & DAUCH**  
*Authority on Packaging*

**SAVE 20%**  
on sealing costs!



### "Dial" gummed tape electrically

The new Marsh Dial-Taper is real news to users of gummed tape. Dispenses all kinds, in widths to 3", electrically. Select your length on the telephone-type dial, dial it, and out it shoots moistened with warm water. Sticks instantly. Saves 1/5 on tape, often more in man-hours.

For more information or a free demonstration mail us this ad with your name and business letterhead

**MARSH Electric**  
**Dial-Taper**

MARSH STENCIL MACHINE COMPANY  
67 MARSH BLDG. • BELLEVILLE, ILL.

## SALES FIELD

*Continued*

to handle the stocking of Manning, Maxwell & Moore Co. products. They will handle this company's complete line of equipment. Other distributors for the area are: Harris Pump & Supply and Somers, Fitler & Todd.

Exclusive sales and service rights of St. Paul Hydraulic Hoist Company have been franchised to Chicago Hoist & Body Company, Chicago. The company will operate in parts of Illinois and Indiana. Announcement came from St. Paul sales manager, Leo M. Brown.

Appointment of Flack Equipment Company as distributors of Baker-Lull materials handling equipment in the Dayton trade area, has been announced by G. C. Strege, President of Baker-Lull Corporation. The firm is located at 1240 McCook Avenue, Dayton, Ohio.

## A. J. GERRARD & COMPANY

**STEELBINDER**

complete strapping kit



convenient,  
all-metal kit,  
with self-  
dispensing  
strip feature

SOLD OUTRIGHT

A complete, portable strapping unit, containing a two hundred foot coil of strapping. Self-dispensing feature provides for easy removal of any desired length. Strapping is available in 3/8", 1/2", 5/8", 3/4" widths and all gauges. For special uses, aluminum, monel, copper, brass, stainless and galvanized strap and seals are available from stock.

### STRAPPING, TOOLS & ACCESSORIES

Phone or Write Today for Full Information  
SALES-SERVICE OFFICES IN PRINCIPAL CITIES

## A. J. GERRARD & COMPANY

main office and factory

1960 HAWTHORNE COURT  
Melrose Park, Ill. (Chicago Suburb)

### WAREHOUSES IN

NEWARK	CLEVELAND	LOS ANGELES
OAKLAND	PORTLAND	BIRMINGHAM



**FISCHBEIN**  
*Portable*  
**BAG CLOSER**

- A truly portable bag closer... weighs only 10 1/2 pounds.
- Lowest priced bag closer on the market.
- Requires no installation... plug into any outlet.
- Handles textile and paper bags.

Thoroughly-proved by thousands of users all over the world to be practical and efficient under varying conditions for constant or occasional use in large or small plants.

Address inquiries to:

**DAVE FISCHBEIN COMPANY, Industrial Sewing Machinery**

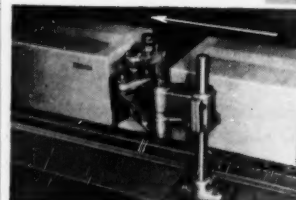
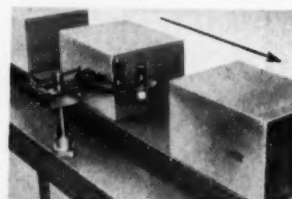
Dept. 4B, 38 Glenwood Avenue, Minneapolis 3, Minnesota  
Circle No. 52 on Reader Service Card for more information  
128

## For quicker warehouse stacking, quicker identification MARK ALL 4 SIDES OF CASES AUTOMATICALLY...in a single pass

New ROLACODER units attach to conveyor or sealer... imprint code-dates, lot numbers on all 4 panels of cases simultaneously... without requiring cases to be turned.

### ROLACODER 500

imprints front and one  
side panel simultaneously



### ROLACODER 200

imprints rear and other  
side panel simultaneously

SEE THEM IN ACTION  
BOOTH 224

National Packaging Exposition  
Atlantic City—April 5-8

Descriptive  
literature  
sent on  
request

*Gottsch*

**ADOLPH GOTTSCHO, INC.**  
Hillside 5, N. J.

50  
Years of  
Leadership

In Canada: RICHARDSON AGENCIES LTD., Toronto and Montreal  
Circle No. 59 on Reader Service Card for more information  
FLOW • MARCH, 1954



## Brainard Adds Tape



Brainard Steel Division of Sharon Steel Corp. has added pressure-sensitive and gummed strapping tapes to its line of strapping materials. The new tapes are filament-reinforced for high tensile strength in strapping applications. According to officials at Brainard, both types of strapping material have their definite place in the shipping department. The company offers dispensers as well as the two types of strapping. A complete training program for Brainard salesmen in the use and application of Brainard Strapping Tape is now underway at the company's training school.

## ITS FELT TIP WRITES ON EVERYTHING!



### in **BOLD** or *fine* lines

Marking steel drums, tools, parts, pipes, etc. is smooth sailing with the Flo-master Felt-Tip Marker.

The complete range of ten colors in Flo-master Inks permits speedy and accurate identification for assembling, stocking, inspecting.

Flo-master semi-opaque inks — waterproof, non-smudging, fast-drying — are recommended for hard-to-mark surfaces using the KING SIZE Flo-master. For general purpose marking — cartons, cases, etc. — use Transparent Inks with POCKET SIZE Flo-master (illustrated).

Contact your supplier or write direct to Cushman & Denison Manufacturing Co., Dept. F-13, 153 23rd Street, New York 11, N. Y.

# Flo-master

FELT-TIP MARKER

Circle No. 37 on Reader Service Card for more information  
**FLOW • MARCH, 1954**

Circle No. 103 on Reader Service Card

want a low cost protective  
**CUSHION PILLOW**  
for your damageable items?



### DOES IT...FOR MOST ANY PRODUCT

In transit or storage, you can cushion wrap best with SOF-RAP and save money doing it. Soft as a blanket, it comes in type C — a single sheet cushion for interior protection against vibration and shock. In Type B — which combines a single sheet cushioning with a strip laminated, tough, durable, kraft outer-sheet for exterior packaging. The latter permits "slippage" — reduces friction damage. Thousands of uses for both, in rolls, sheets, tubes and bags. Get the facts now. Write for

Free, Helpful Booklet, Now!



the grip of an **iron fist**



in a soft **velvet glove**

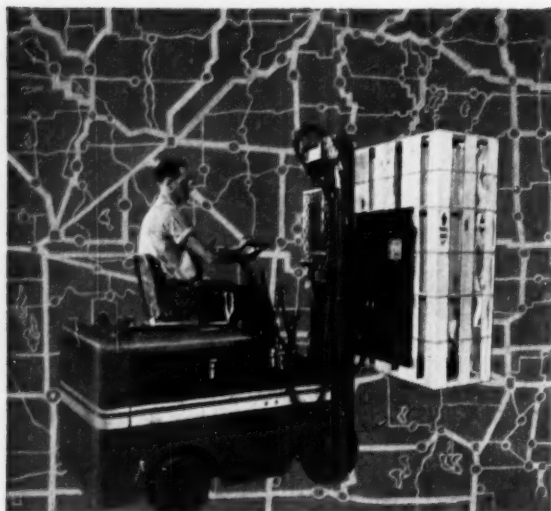


### **cush-on-strap** by Sackner

A patented Steel Strapping faced with soft, fluffy cellulose padding. CUSH-ON-STRAP is prescored to desired lengths and ready for immediate use. Ideal for packing all types of appliances and other finished metal products.

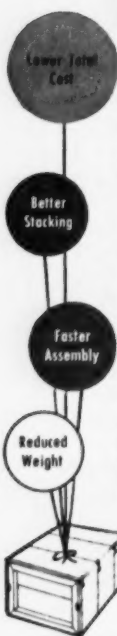


Circle No. 119 on Reader Service Card for more information



Your handling goes modern  
when your product goes

## WIREBOUND!



It's easy to see how you put new life in your handling operation when you put your product in a Wirebound. For with Wirebound's unique construction of strong steel wire and light, tough wood—your product gets the best in protection while you get a container that adapts to an infinite variety of handling procedures. Just how well Wirebounds suit up-to-date handling methods is shown above where a heater manufacturer moves Wirebounds with a finger-lift truck to achieve easier, speedier storage in really close quarters. Remember—no matter what you handle or how you handle it . . . you'll handle it better when it's a Wirebound box, crate or pallet box.

*Wirebound*  
**BOXES & CRATES**

**MAIL THIS COUPON NOW!**

### WIREBOUND BOX MANUFACTURERS ASSOCIATION

Room 1171, 327 South LaSalle Street, Chicago, Illinois

- ☐ Have a sales engineer give me the whole story  
☐ Send me a copy of "What to Expect from Wirebounds"

Name

Firm Name

Address

City, Zone and State

Circle No. 142 on Reader Service Card for more information  
130

## PACKAGING AND SHIPPING NEW EQUIPMENT . . .

(Continued from page 117)

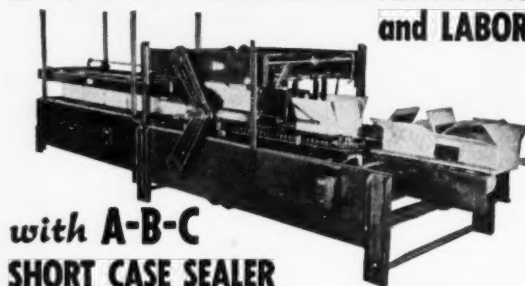
### Simple Marking System

A system which simplifies and speeds multiple addressing of shipping containers has been developed by Weber Addressing Machine Co. Called the Weber Direct-to-Container system, it consists of imprinting the customer's address inside label frames that have been pre-printed on the shipping carton. Actual imprinting of the address is done with a Weber RJ-1 hand printer and stencil. The small stencil is prepared with the ship-to address on a typewriter, either separately or simultaneously with invoice or bill-of-lading forms, and then sent to the shipping department. There, the stencil is clipped over an RJ-1 hand printer and used to imprint the address inside the frames already on the carton. When the exact number of cartons in the shipment have been addressed, the stencil is destroyed.

Circle 206 on Reader Service Card for more information



**Save  
FLOOR SPACE  
and LABOR**



**with A-B-C  
SHORT CASE SEALER**

Save two-thirds of your valuable floor space with the A-B-C Short Case Sealer—with increased packaging efficiency, more speed, less expense . . . Automatically glues, folds and seals either or both top and bottom flaps of shipping cases in one operation. Made in eight models to fit any production requirement. Hot air heaters dry the glue in one-half the time. Speeds up to 30 cases per minute.

### TOP QUALITY CASE HANDLING EQUIPMENT

Whatever your packaging job, A-B-C has a production proved machine for you—case sealers, unloaders and unscramblers, side sealers, and hand gluers.



See ABC Sealers in Operation at the  
Chicago PACKAGING SHOW, Booth  
732-736, April 5-8

**A-B-C** PACKAGING MACHINE CORP.  
QUINCY, ILLINOIS

Circle No. 11 on Reader Service Card for more information  
FLOW • MARCH, 1954

## Automatic Bagger

The Autobagger, manufactured by Northwest Equipment Co., is said to provide an even-flow,



automatic bruise free bagging operation for all types of produce. It fills and weighs all types and sizes of bags from two to 15 lb. Two variable speed, level running automatic belts feed the bag holders mounted on over - and - under scales. The bagger

may be fed by dump (optional) or directly from a conveyor belt. Rubber tired casters are furnished for easy moving, if desired.

Circle 207 on Reader Service Card for more information

## High-Speed Adhesive

National Adhesives, division of National Starch Products Inc. has developed a Resyn type emulsion said to be extremely fast setting and ideal for use as a seam adhesive on satchel bottom bags. Resyn 3100, as the new product is called, is light in color, gives high coverage since it can be applied in a thin film and leaves no residual odor. The quick setting characteristic of the adhesive



## LOT LABELLING

**Eliminate Shipping Labels! Print Direct!**

Quick! Accurate! Easy! Print shipping information direct on cartons, boxes, packages. Eliminate double operation of preparing labels and then pasting them to the containers. Get 1,000 or more clear, sharp impressions from one stencil without re-inking. New FORM-CUT® Stencil has facsimile of your label or shipping form die-impressed into the stencil. Then type or write in address or identification data . . . attach to duplicator . . . and print, like using a rubber stamp. Write for Literature and FREE SAMPLE FORM-CUT STENCIL AND PRINT.

THE ORIGINAL HAND STAMP  
STENCIL DUPLICATOR



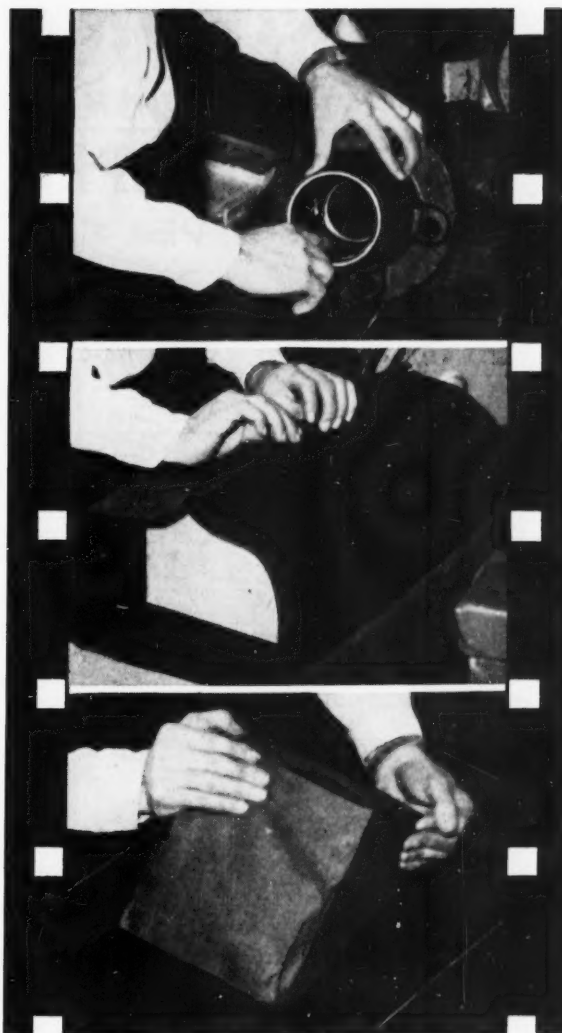
OVER 30 YEARS

**MULTISTAMP**  
STENCIL DUPLICATOR (R)  
MANUFACTURED ONLY BY THE MULTISTAMP CO. RICHMOND, VIRGINIA

Also for addressing shipping tags and labels . . . prints postcards, menus, forms, bulletins. 8 complete outfits: \$9.50 to \$99.50, including supplies (f.o.b. factory). At office or shipping room supply dealers.



Circle No. 101 on Reader Service Card for more information  
**FLOW • MARCH, 1954**



## No packaging failures after Dunbar Kapple changed to GREEN CORE® Barrier Raps

One of the metal parts packaged for the armed forces by the Dunbar Kapple Co., Geneva, Illinois, is a repair hub for ¾-ton trailers. The hubs are shipped overseas, or go into storage.

In 1951, Dunbar Kapple changed to Green Core Cloth Rap for the specified waterproof, greaseproof, self-sealing overwrap sheet. Now, many, many thousands of packages later, they report a perfect record . . . no package failures with Green Core.

Many companies also use lower cost Green Core Barrier Raps to protect parts in storage. Your company can cut costs, do a better job with Green Core Barriers. Write for complete information, including samples and test data.

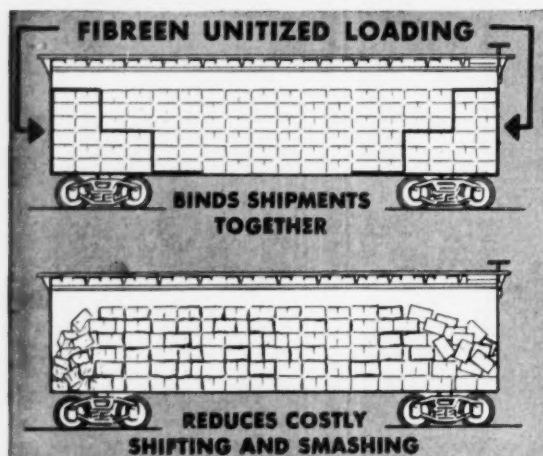
## LEADERS IN THEIR LINE

**MID-STATES Gummed Paper Company**  
2523 South Damen Avenue, Chicago 8, Illinois  
New York • Boston • Philadelphia • Cleveland • Detroit • St. Louis • Atlanta • Los Angeles

Circle No. 94 on Reader Service Card for more information



# STOP DAMAGE WITH THIS TOUGH RETAINING PAPER FOR ABOUT \$3 PER CAR



ON HUNDREDS OF SHIPMENTS  
**FIBREEN**  
IS REDUCING DAMAGE CLAIMS  
60% TO 80%!

Waterproof, reinforced Fibreen—the toughest paper—holds shipments together as a unit, in spite of freight car jolting . . . humping and shunting.

Thousands of safe shipments are proof that unitizing loads with Fibreen is doing an outstanding job in preventing cartons, bags, etc. from being smashed in endwells and voids.

Maybe it's the answer to your damage problems. Write to Dept. F-3, Attleboro, Mass. today for complete details on unitized loading and information on Fibreen for packaging.



AMERICAN  
**SISALKRAFT**  
CORPORATION

ATTLEBORO, MASS. • CHICAGO 6, ILL. • NEW YORK 17, N.Y. • SAN FRANCISCO 5, CALIF.

Circle No. 126 on Reader Service Card for more information

132

is said to eliminate leakers or small un-adhered areas along the bag seams, particularly at score points.

Circle 208 on Reader Service Card for more information

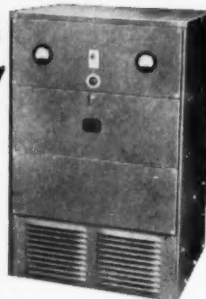
## Indented Type Cushioning

Jiffy Mfg. Co. has announced the addition to their line of two new cushioning materials for protective packaging of furniture. The materials are trade-named Kushion-Kraft and Custom-Wrap. Kushion-Kraft pads and blankets for interior and exterior protection of living room, dining room and similar furniture in rail or truck shipment, are constructed with multiple layers of indented kraft. Custom-Wrap is made of indented layers of soft, resilient facial tissue with kraft backing and is used for packing case goods.

Circle 209 on Reader Service Card for more information



## "KEEP 'EM ROLLING" with Dual-Purpose Selenium Rectifier INDUSTRIAL TRUCK BATTERY CHARGERS by *Federal*



Save time and money  
with the BEST...  
check these 10 big features:

- Lead or Edison type can be charged with 1 FTR charger.
- Automatic charging for two-rate lead batteries.
- Metered charging for Edison batteries.
- AC converted to DC by long-life FTR selenium rectifier.
- High efficiency keeps power bills at minimum.
- 8-hour charging keeps more trucks ready for service.
- FTR charger versatility permits low equipment inventory.
- FTR chargers meet requirements of the ITSA.
- Easily installed in minimum space; simple to re-locate.
- FTR's automatic charge recycling control (optional).

"America's first and largest manufacturer of selenium rectifiers"



For details write to Dept. E-667

**Federal Telephone and Radio Company**

SELENIUM-INTELIN DEPARTMENT 100 KINGSLAND ROAD, CLIFTON, N. J.

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.  
Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.

Circle No. 167 on Reader Service Card for more information

FLOW • MARCH, 1954



## COST CONTROL . . .

(Continued from page 65)

(5) Palletized casting handling in the storage yard resulted in a saving of \$7,500.

In each case, the dollar figure is based on actual labor cost. The savings in better utilization of storage space, safety to the workers, and release of more expensive equipment to other duties are apparent.

Safety should be emphasized in that improper material handling is the cause of approximately 30 percent of all industrial accidents. (See *Flow*, Dec. 1953—Ed.) More efficient material handling may vary from the furnishing of a hoist to replace the straining muscles of a man's back to setting up the completely automatic plant.

### Cost Considerations for Automatic Handling

Automation, a term creeping into material handling, presents some very interesting problems. To the manufacturer producing a highly repetitive object—such as artillery shells or automobile parts—a completely automatic factory should present a very interesting answer to the material handling problem. The advantages can be quickly summed up by five major headings:

(1) Lower production costs by reduced manual handling of parts: This does not mean elimination of all manpower but rather a redistribution. Much less unskilled labor is required, but a greater number of skilled mechanics will be needed to maintain equipment and change tools.

(2) Greater production-per-machine by elimination of inherent delay in the loading and unloading cycle: Machines or equipment are virtually run at full speed 100 percent of the time, not considering normal maintenance down-time and tool change.

(3) Increased quality of each manufactured part through reduction of damage caused by parts striking each other.

(4) Safety increased to a high degree due to the elimination of hazardous handling of such parts as stampings, forgings, and other large parts.

## The proof of QUALITY...

## The guarantee of SERVICE...

### Richards-Wilcox "Zig-Zag" Continuous Power Conveyors



• Bath scale housings moving through electrostatic spray booth on "ZIG-ZAG" Conveyor in plant of Continental Scale Corp., Chicago. Note swivel pendants to revolve housings.

• "Up they go, out of the way". Scale housings on way from baking ovens to final assembly. Note ample aisle clearance.

Quality more than pays for itself, in the long run. Years of safe, trouble-free, low-cost service brings many dividends in production efficiency.

That's why more and more plants are demanding Richards-Wilcox "ZIG-ZAG" Continuous Power Conveyors to help fill their materials handling needs.

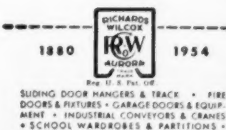
"ZIG-ZAG" Conveyors take materials handling *overhead* where space is ample. The track moves up, down, in, out and around, carrying unit loads up to 125 pounds at speeds from one inch to 60 feet per minute.

When relocation is necessary, the entire system may be altered

to fit the new conditions by plant personnel, and in most cases using *all the original parts*. And 6 inch pendant centers make it an easy matter to handle any production needs.

Richards-Wilcox "ZIG-ZAG" Continuous Power Conveyors mean extra safety for product and personnel; smoother, more efficient materials handling; and lower production and labor costs. Find out how "ZIG-ZAG" can help you, too.

Write today for complete details or consult with an R-W Engineer—at no obligation.



## Richards-Wilcox Mfg. Co.

MATERIALS HANDLING DIVISION

420 THIRD STREET, AURORA, ILLINOIS

Circle No. 113 on Reader Service Card for more information

## THE ROBO-LIFT TRAY ELEVATING CONVEYOR



Elevates  
(or lowers)  
and  
conveys  
cartons  
cases  
trays  
crates  
boxes.  
Manual or  
automatic  
infeed.

The sketch above shows how the Robo-Lift solves the problem of materials handling in an awkward, multi-story building.

The Robo-Lift is capable of handling various carton sizes

**SAFELY, GENTLY, POSITIVELY**

Cartons can be handled sealed or open, vertical-to-horizontal or horizontal-to-vertical, with pick-up or discharge at more than one level. Designed and built by the manufacturers of the

**ROBO-LIFT BUCKET  
ELEVATING CONVEYOR**

Write for free literature



Circle No. 35 on Reader Service Card  
134

## COST CONTROL

*Continued*

(5) Reduction of manpower fatigue, in those employees who must remain, by use of simple interlock electrical controls to make the decisions, and employment mechanical devices to do the actual labor.

### Some Disadvantages

There will also be some disadvantages, including the following:

(1) Maintenance costs are always brought up when there is a discussion of handling equipment that must be fully automatic. Maintenance is in the decided disadvantage classification. However, as skill in automation design increases, details of the systems can be simplified, systems can be built more ruggedly, and preventive maintenance can be more carefully practiced.

(2) Additional engineering costs must be considered because of the need for close cooperation between many elements—such as plant layout, processing, tool and

die design, machine tools, and material handling. Such careful planning necessitates many design hours before a plan is activated.

(3) Installation costs are inherent with all equipment. However, a problem occurs when existing machines are operating and automation is found necessary. Re-arrangement of large machinery and equipment can be very costly if done to suit the automatic plan. When this occurs, justification of moving must be dictated by advantages gained.

(4) Specialized nature of equipment is another disadvantage. Each detail of the end product's requirement calls for special consideration because of size and shape. Another item along this line is the varied loading and unloading stations of machines in the layout due to the lack of a common standard with different manufacturers.

It is impossible to provide an all encompassing, short formula for the reduction of material handling costs . . . each material handling problem must be analyzed by itself.

## Brand New...

### WRIGHT-HIBBARD HYDRAULIC LOW LIFT PLATFORM TRUCK

Over nearly half a century, Wright-Hibbard low lift platform trucks have earned an enviable reputation for ruggedness and maneuverability. Now they're better than ever. Completely redesigned with hydraulic lift, ball and socket steering, Timken bearings on all wheels. There's no shifting of gears between driving and lifting. Maintenance costs are cut. Steering is easier. Driver fatigue is reduced to a minimum.

Here is as fine a low lift platform truck as has ever been designed! Capacities 2000 to 4000 lbs. Platform sizes to suit any need.

Precision-Built Industrial  
Electric Trucks Since 1917



Write for bulletin  
giving general specifications  
and engineering data.

## WRIGHT-HIBBARD

Low Lift Platform Trucks  
High Lift Platform Trucks

Fork Lift Trucks  
Burden Carrying Trucks

WRIGHT-HIBBARD INDUSTRIAL ELECTRIC TRUCK COMPANY, PHELPS, N. Y.

Circle No. 146 on Reader Service Card for more information

FLOW • MARCH, 1954

## "MAILMAN" CONVEYOR . . .

(Continued from page 85)

where a mechanism will reset the control tabs on the carrier for delivery to the 14th floor. Arrival of the loaded tray back at the mail room is an indication that something is out of order. However, as soon as one or two trays are removed from the fully-loaded station, the mechanism will again operate.

All panels and work tables are the same at each floor with the exception of the 14th floor. Here the unloading station discharges to a belt conveyor at right angles to the selective vertical. The belt conveyor, in turn, discharges to another belt within the mailing room. This second conveyor moves containers onto a spiral storage conveyor which feeds by gravity to a separating table where outgoing mail and parcel post are separated from recirculating mail. Here, a loaded container sent to a floor and refused because of overload is immediately noticed.

Recirculating mail is distributed to two lines of trays on each of two portable buggies, with sufficient trays available to provide one for each floor. After this separation, these portable buggies are wheeled to another table where incoming mail is sorted into the proper containers. From this point, trays are wheeled to the dispatching station where all loaded containers are dispatched.

When the girl arrives at her station in the morning she snaps a switch which indicates that her floor is operating on the call register on 14. When she leaves her station for any extended period of time, she switches the light off.

### Outstanding Performance

Performance of the conveyorized mail handling system has proved to be outstanding. Important communications marked "special" can be sent from one part of the building to another in less than ten minutes. Using normal handling methods, without the conveyor, mail leaving one floor and arriving at another could take as long as one and a half hours.

FLOW thanks Lamson Corporation for furnishing the data and photos used in this article.

Work-O-Matic® End-Loading Scoop for lift trucks.

Greater storage with compactly tiered Steel Boxes.

Work-O-Matic® Box in controlled dumping operation.

Select the money-saving units you need from  
**INDUSTRY'S BROADEST LINE OF**  
*Material Handling Containers*

Work-O-Matic® Multi-Duty Tray for long pieces. Collects, transfers, tiers and dumps.

Skid Platform . . . one of many types.

Typical Steel Skid Box.

Double-Deck Pallet.

Nesting and Hopper Front Steel Shop Boxes—two of many standard types.

Work-O-Matic® Box with Production Positioning Stand.

Vu-O-Matic® Rotary Parts Storage Stands.

A broad line is one thing. Far more important is the fact that Union Metal units introduce exclusive *new method* features responsible for huge cost savings in plant after plant. Get up-to-the-minute facts. Indicate the type units you are interested in and write to The Union Metal Manufacturing Company, Canton 5, Ohio.

\*Patent No. 2,445,038. Other patents pending.

**UNION METAL**  
*Material Handling Equipment*

Circle No. 137 on Reader Service Card for more information





## What's NEW

## in useful FREE literature

These publications, written by experts, are FREE. Indicate your choice on the self-mailing Readers Service Card.

### Tramrail Equipment:

A catalog issued by The Forker Corporation contains eight pages of illustrations and drawings which show the complete line of Ohio Tramrail Systems manufactured by the company. Cross-section views with dimensions are given for both the Ohio Teerail Track and 13 sections of heavier Ohio Beamrail Track. Also described are tramrail trolleys and switches; jib and gantry cranes. Line drawings and photos show details and installations of the company's shielded electrification.

Circle 210 on Reader Service Card

### About Dependability:

Dependability is the theme behind a 32-page brochure from Clark Equipment Company. This colorful booklet describes briefly some of the trucks, tractors, straddle carriers and mobile cranes manufactured by Clark, and details some of the component parts. In short, the company points out that the dependability of its products can safely be taken for granted.

Circle 211 on Reader Service Card

### Floor Truck Catalog:

The Nutting Truck and Caster Company has released a 3-color, 12-page catalog which illustrates 50 different models of floor trucks, 12 types of dollies and 16 styles of casters, in addition to a new combined tractor-trailer and tow-line order picking system for warehouses. Complete specifications on all standard sizes available on each item are given.

Circle 212 on Reader Service Card

### Drag Scrapers:

Sauerman Bros., Inc., has released a 4-page brochure on long-range material handling machines. Line drawings are utilized to provide a simple explanation of how the drag scraper, slackline cableway and tautline cableway operate. Photos showing all types of Sauerman equipment working in the field are included, along with sections on scraper storage, excavation and the use of scrapers with boom machines.

Circle 213 on Reader Service Card

### Pallet Trucks:

Data Sheet 1 from American Matling Inc. describes and illustrates the company's line of pallet trucks. An advantage of the trucks claimed by the company is their ability to turn a load in an area-way equal to the diagonal of the pallet load.

Circle 214 on Reader Service Card

### Crane Weight Indicator:

Literature from Martin-Decker Corporation describes the Martin-Decker crane weight indicator which is said to fill a definite need by showing the crane operator the exact boom radius at which he is operating, the safe capacity of his crane at that radius and the exact weight he is lifting.

Circle 215 on Reader Service Card

### Conveying Equipment:

A 16-page illustrated catalog of Rapistan conveying equipment is available from The Rapids-Standard Company, Inc. Designated Catalog GC-53, the catalog has

photos, specifications and application suggestions on the complete Rapistan line of conveyors, casters and hand trucks.

Circle 216 on Reader Service Card

### Palletized Case Loading:

"Palletized Case Loading" is a brochure on fork trucks in the bottling industry, available from Hyster Company. The new booklet stresses higher profits in the use of a pallet system and fork trucks. Actual case studies and on-the-scene illustrations are featured.

Circle 217 on Reader Service Card

### Adjustable Dock Ramps:

An 8-page catalog from Beacon Machinery, Inc., features the company's adjustable dock ramp which adjusts to compensate for changes in cargo weight that cause the vehicle springs to compress or expand during loading or unloading. Also described are the Beacon hydraulic lift table and the automatic pallet dispenser.

Circle 218 on Reader Service Card

### Lightweight Hoist:

A 4-page, two-color bulletin describing the Coffing Challenger is available from the Coffing Hoist Company. The Challenger is a lightweight spur gear hoist of formed steel construction that is said to feature portability and resistance to shock load breakage. Included in the bulletin: a cut-away drawing, dimension drawings, specifications.

Circle 219 on Reader Service Card



### Tractor-Mounted Trencher:

The Oliver Corporation offers literature describing its Model 83-WT Hydro-Trencher which has two separate hydraulic circuits with individual controls to permit performance of practically any two operations at once without loss of pressure.

Circle 220 on Reader Service Card

### Floating Dock Ramp:

An illustrated bulletin describing its manual floating 20,000-pound capacity hydraulic adjustable ramp is available from Rowe Methods, Inc. The bulletin, complete with operating and design details and specifications, covers the No. 20 M.F. Adjust-A-Dock, which can be recessed into the dock, partially recessed or installed in front of the dock.

Circle 221 on Reader Service Card

### Pickup Trucks:

Autoette, Inc., offers a brochure on its electric pickup trucks, which are said to cost practically nothing to operate. Details of the 1/4-ton and 1/2-ton models are included, together with specifications.

Circle 222 on Reader Service Card

### Still Removing Snow?

"How to Cut Snow Removal Costs Up to 50%" is the title of a descriptive catalog issued by National Lift Company and which covers Snowlift hydraulic snow plow controls. The catalog illustrates how more than 10,000 Snowlift users have averaged savings of \$100 a plow, per season, in their snow removal programs.

Circle 223 on Reader Service Card

### Diesel, Gas Fork Trucks:

The Buda Company offers literature on its new FT Series, diesel or gasoline powered fork trucks, which are available in capacities of 3000, 4000, 5000, 6000 and 7500 pounds. These FT fork trucks are said to be completely new in design.

Circle 224 on Reader Service Card



## STANLEY *Magic Door* CONTROLS

### Present Many Opportunities to REDUCE Costs

Doors that are opened and closed automatically by Stanley Magic Door Controls save man hours and traffic flows more smoothly and faster. They save wear and tear on plant mobile equipment as well as on the doors themselves. Heat and humidity losses are minimized. Employees are happier and more efficient . . . and every plant finds plus benefits from every different application on new or existing doors.

Let a Stanley representative share with you his knowledge, gained by over 20 year's experience, to help you reduce costs.

Magic Door Controls with pull cord, regular Stanley operator for "in" and "out" door handling 2-way traffic, using existing air supply on existing doors can be purchased for as little as \$385.00. Send for further information today.

	The Stanley Works, Magic Door Division 3013 Lake St., New Britain, Conn.	
	Gentlemen: ( ) Please send full information on Stanley Magic Door Controls. ( ) Have representative stop in when in the area.	
REPRESENTATIVES IN PRINCIPAL CITIES	Company Name _____	
	My Name _____	
	Address _____	
	City _____ Zone _____ State _____	

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

Circle No. 176 on Reader Service Card for more information

### Hand Pushed Trolleys:

Jervis B. Webb Company announces publication of a catalog on hand pushed trolleys, cranes and switches. The 16-page catalog, No. 453, contains complete specifications on the equipment, and is said to be of interest to companies requiring a mechanical method of handling products intermittently where the cost of a power-driven trolley conveyor would not be justified.

Circle 225 on Reader Service Card

### Selecting Crane-Excavators:

The Wayne Crane Division of the American Steel Dredge Company Inc. announces the availability of a pocket-size technical booklet titled "Handbook of Data for Proper Selection of Crane-Excavators." The booklet contains specific information on major design and construction fundamentals, and actual comparison charts are included.

Circle 226 on Reader Service Card

### Storage Battery Manual:

Users of storage batteries can obtain the new, sixth edition of the storage battery "Red Book" which is announced by Gould-National Batteries, Inc. The 60-page booklet contains several new tables and illustrations of new battery tools and auxiliary equipment. It begins with a brief treatise on the theory of the lead-acid battery, and four subsequent sections give detailed instructions on the care and operation batteries, maintenance repairs, standard and special parts and technical tables.

Circle 227 on Reader Service Card

## NEW! THE DD SERIES DOWN STROKE AMBACO BALERS

ENGINEERED  
FOR MODERN  
PRODUCTION  
PRACTICES AND  
REQUIREMENTS



**Today, more than ever, cost-cutting requires practical handling of the baling operation to promote . . . plant efficiency . . . plant safety . . . cleanliness.**

Managers in plants of all sizes are finding out that modern-design Ambaco Balers pay for themselves many times over. With Ambaco Balers fire dangers are minimized, valuable floor space is made available, "good housekeeping" practices are encouraged, barriers to efficient flow are removed. And excess material that was formerly a nuisance and annoyance becomes a saleable commodity.

#### **Ambaco offers the first and only Automatic Cycle.**

"Down Stroke" Ambaco Balers, like the one pictured above, are completely engineered by the foremost experts in the field . . . solidly backed by 40 years experience. Ruggedly constructed and easily operated by hourly personnel, this double door, down stroke type incorporates many outstanding features.

**There are specific models in the Ambaco Baler line designed for maximum efficiency and advantage in your plant. Tell us your problem. Literature . . . engineering analysis available.**

**The AMERICAN BALER CO. 543 CENTER ST. BELLEVUE, OHIO**

Circle No. 12 on Reader Service Card for more information

### Electrification Bulletin:

Feedrail Corporation has issued a 28-page bulletin (No. 35) which catalogs its newly-designed heavy duty trolley busway electrical distribution systems. The bulletin illustrates and describes the 225, 375 and 500 ampere systems for electrification of heavy duty cranes and hoists, conveyor assembly lines or other moving equipment. Included are special sections on installation planning and procedure, methods of mounting and typical installations.

Circle 228 on Reader Service Card

### Portable Positioners:

Literature from James Campbell Smith Inc. details the Gonser portable positioners which are said to permit safe, efficient work handling in an unlimited number of manufacturing operations. This tool combines the wedge, screw and toggle to form a gripping unit which grips before it lifts and grips more as it lifts.

Circle 229 on Reader Service Card

### New Ideas in Slings:

"New Ideas in Red-Strand Slings" is the title of a folder published by Leschen Wire Rope Division, H. K. Porter Company, Inc. It describes the new line of Red-Strand multiple part slings and the Pin-Lock thimbles, explaining how these thimbles reduce sling costs by an average of 20%.

Circle 230 on Reader Service Card

### Portable Conveyor:

Arrow Products Inc. has prepared for release new informative literature on its lightweight steel roller conveyor and aluminum frame steel roller conveyor. Features of the equipment are said to be its strength, light weight and portability.

Circle 231 on Reader Service Card

### Electric Fork Truck:

Its newly developed 2000 lb. fork truck is outlined in a two-color, 4-page brochure from Elwell-Parker Electric Co. Termed the "Cargo Scout", the truck is of the stand-up rider type, battery powered, and designed for handling loads in confined areas at maximum speed. Short wheelbase and 360 degree steering permits maneuvering in narrow aisles and inside truck trailers and box cars.

Circle 232 on Reader Service Card

### Crane Drives:

The General Electric Company has announced the availability of a new 12 page bulletin on its d-c crane drive equipment. The well-illustrated publication uses cutaway and exploded views of d-c crane motors and control, and points up outstanding features incorporated in the unit.

Circle 233 on Reader Service Card

### Speed Reducers:

Special and standard speed reducers are discussed in a new 15-page booklet available from Westinghouse Electric Corporation. Features, manufacturing techniques and applications are depicted.

Circle 234 on Reader Service Card

### Tractors:

American Tractor Corporation pictures tractors for every need in its descriptive folder on the Terra-trac. The company proudly points to its achievements over the past several years, and lists many of the handling problems solved through use of its equipment.

Circle 235 on Reader Service Card

# PALLETTAINERS - TIME SAVERS



They save you time in so many ways! On the production line, in storage or in shipment, Palletainers speed handling, save space and guard against damage. Reinforced steel rod construction is virtually indestructible. New extra-strong malleable cast legs provide 8-way entry for fork trucks, assure totter-free grip for stacking. New locking device holds sides securely under load. Cannot be released accidentally or lost in shipment. Light weight holds freight costs 'way down and empty Palletainers fold to 1/4 space for further savings on return trips. Whatever your handling problem, let us prove how quickly Palletainers pay for themselves in the time and costs they save.



**UNION STEEL PRODUCTS COMPANY**  
Albion, Michigan

Circle No. 138 on Reader Service Card for more information

## Crate Handling Problem?

Literature from Lewis-Shepard Products, Inc., describes the company's crate handling attachment, which performs two separate functions: it handles equipment in cardboard cartons and also equipment in wirebound crates. It can handle cartons or crates up to 1500 pounds, and can be made in tandem to handle four appliances simultaneously.

Circle 236 on Reader Service Card

## Industrial Cranes:

A 24-page bulletin on industrial cranes has been published by Harnischfeger Corporation. The two-color brochure is plentifully illustrated with photos of a wide variety of installations of P&H industrial cranes. Explanatory diagrams and scenes showing different phases of crane production are included, as well as complete specifications.

Circle 237 on Reader Service Card

## Magnet Selector Chart:

A "Plate Magnet Selector Chart", used to help select the most efficient plate magnets to separate tramp iron from materials conveyed in chutes, is offered by Eriez Manufacturing Company. The face of the chart is made up of diagrams and tables with explanatory captions. One side of the chart describes the advantages of permanent magnets, the permanency of Alnico V magnetic separators, the importance of application engineering, and other facts.

Circle 238 on Reader Service Card



Make **AIR** Space...  
**FLOOR** Space with

ALL **E-I-W** STEEL

**"MULTI-STAK"**  
**Pallet Stacker Unit**

Safely tier to the ceiling...  
**FRAGILE, SOFT, IRREGULAR-SHAPED**  
 and **MIXED MERCHANDISE**

Are you wasting valuable upper space in your plant and warehouse? It's there to be used, and you can use it with E.I.W. "Multi-Stak"... all-steel, welded pallets with self-supporting standards. No weight ever rests on the merchandise! Self-contained, pin-in-slot locking device enables one person to set-up and secure standards quickly and safely.



Standards Lock  
in Secure  
Upright Position



Carried  
and Tiered  
by Fork Truck



Collapsed for  
Compact Storage

**UNIT CAPACITY: 4,000 lbs.**  
**STACKED STATIC CAPACITY: 20,000 lbs.**  
*A type and size for every use.*



Actual on-the-job photograph showing operation in which a carload of kegs was unloaded and stored in less than 2 hours by 3 men.

Write for complete story with pictures and "Multi-Stak" specifications.

**ELIZABETH IRON WORKS, Inc.**

Materials Handling Equipment Specialists, Steel Fabricators SINCE 1907  
 544 GREEN LANE, ELIZABETH, N. J.

Circle No. 82 on Reader Service Card for more information

## Crane, Shovel Paper:

An information bulletin in the form of a 4-page newspaper is issued by Schield Bantam Company. Called the Bantam City Press, the bulletin features stories, pictures and specifications concerning Schield Bantam's new  $\frac{3}{4}$  yard 5-ton crawler Model C-35, as well as specifications and pictures of its specially-designed Crane Carrier, built specifically for mounting the Model T-35 truck-mounted crane. Included are coupons, offering such services to users as "how-to-do-it" information on various job applications and specification bulletins for the company's complete line.

Circle 239 on Reader Service Card

## Table And Chair Trucks:

A specifications sheet on two new models of floor trucks has been released by The Hamilton Caster & Mfg. Co. The trucks are particularly designed for moving and storing folding tables and chairs, and standard sizes have been developed.

Circle 240 on Reader Service Card

## Shovels And Cranes:

A new book has been published by the Thew Shovel Company, covering the construction of its equipment. Entitled "The Inside Story on the Package Component Design of the Thew Lorain TL Series", the booklet portrays each detail in the manufacture of the units.

Circle 241 on Reader Service Card



### Electric Hoists:

A new bulletin describing its line of lightweight Liftabout Jr. electric hoists has been issued by the Shepard Niles Crane & Hoist Corp. A wire rope type hoist, it has a compact, planetary gear, designed for intermittent duty. Many features are incorporated to give easy control and simplified servicing.

Circle 242 on Reader Service Card

### Torque Drive:

Fork truck gear shifting is eliminated by use of TowmoTorque Drive, which has been engineered by Towmotor Corporation for its equipment. Smooth operation is permitted at all speeds, and operator may change from forward to reverse without coming to a full stop. Booklet has been prepared outlining specifications and operation data on this new drive, and is available on request.

Circle 243 on Reader Service Card

### Twelve Handling Problems:

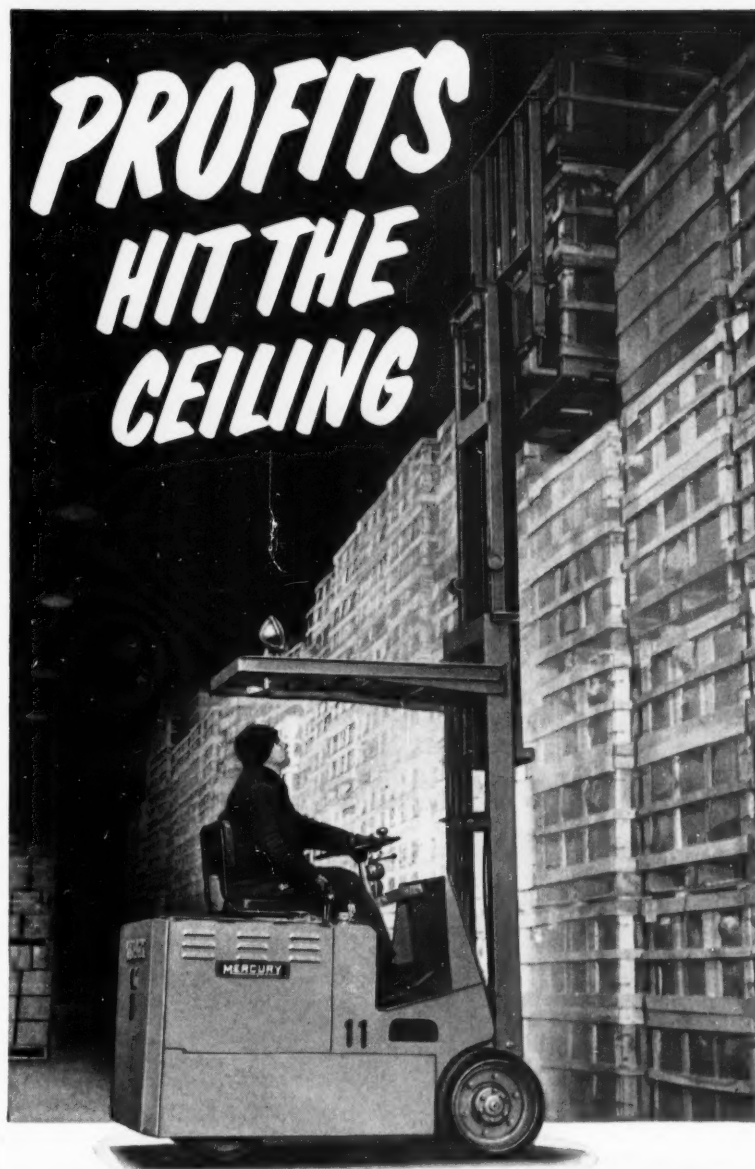
Lewis-Shepard Products, Inc., in a recent issue of its Lever publication, pictures and describes twelve diversified handling problems, together with their solutions. Many types of equipment manufactured by this firm are depicted, from their walkie electric Jack-Stacker, to electric SpaceMaster fork trucks and floor trucks.

Circle 244 on Reader Service Card

### Power Cranes, Shovels:

Baldwin-Lima-Hamilton Corporation, Construction Equipment Division, announces the availability of descriptive bulletins covering its LIMA Type 44 and LIMA Type 303 machines. Type 44 is a 1-yard machine with a 15-foot dipper handle and a 20-foot boom. Equipped as a crane, it has a lifting capacity of 25 tons. Type 303 is a 2½-yard machine with an 18-foot dipper handle and a 24-foot, 6-inch boom. As a crane, it has a lifting capacity of 50 tons.

Circle 245 on Reader Service Card



## MERCURY "YAK" TIERS 4,000 POUND LOADS TO HEIGHTS OVER 22 FEET

Produce Terminal Cold Storage Co., Chicago, operating nearly 3,000,000 cubic feet of freezer, cooler and convertible refrigerated space, gains full utilization of every foot of storage by tiering loads clear to the rafters with MERCURY "Yak" fork

trucks. Loads 48" long are tiered to heights over 22 ft. from 12 ft. aisles.

Advanced design features of the YAK 430 are . . . higher maximum fork elevation . . . increased free lift . . . greater speed . . . lighter chassis weight . . . shorter turning radius . . . simple low pressure hydraulic hoist system . . . new unit drive with quick detachable motor and self-energizing hydraulic brakes.

MERCURY — the world's largest builder of industrial haulage equipment and originator of the "Trackless Train."



## MERCURY MANUFACTURING COMPANY

4154 S. Halsted St., Chicago 9, Ill.

Circle No. 90 on Reader Service Card for more information

### Rotary Compressor:

A reprint of a technical article, offered by the Fuller Company, pictures and describes a six-unit rotary compressor installation that supplies compressed air for three different plants. The reprint describes the two-stage rotary compressors and covers operating sequence in detail. Included is a description of the process for dehumidifying compressed air.

Circle 246 on Reader Service Card

### Pneumatic Conveyor:

Simplicity and versatility are stressed in the 2-color, double page bulletin on the Vacu-Veyor, manufactured by the Vacu-Blast Co., Inc. According to the manufacturer, this pneumatic conveying system can be engineered and built to handle practically any capacity in either portable or fixed installations. Minimum maintenance is claimed.

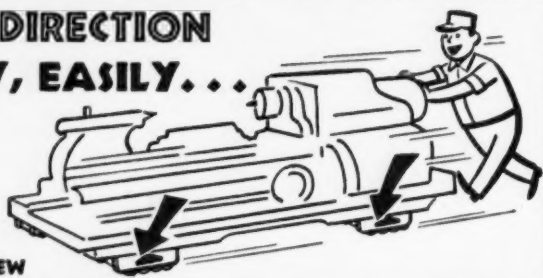
Circle 247 on Reader Service Card

### Condensed Truck Catalog:

Publication of a new and revised condensed catalog covering electric-driven industrial trucks is announced by Automatic Transportation Company. The catalog includes data on Automatic's "Dynamotive", the gas fork truck with electric transmission. The 4-page catalog illustrates and describes representative models of Automatic's riding-type and driver-led electric trucks. Also included are details on the firm's line of fork truck attachments.

Circle 248 on Reader Service Card

## NOW YOU CAN MOVE HEAVY MACHINERY & EQUIPMENT IN ANY DIRECTION QUICKLY, EASILY...

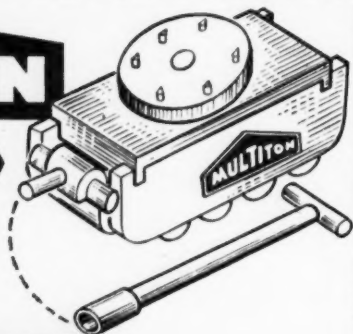


WITH THE NEW  
**UNIVERSAL SWIVEL PLATE-EQUIPPED**

# MULTITON

## ROLLER SKID

Built like a tractor, MULTITON has a carrying capacity of 3200 times its own weight. Yet, it is compact, light and needs so little storing room. Multiton gives you savings in labor and handling.



## HERE'S HOW MULTITON CAN WORK FOR YOU...

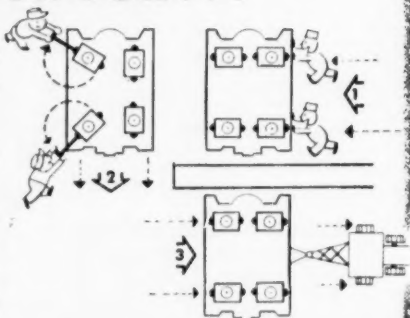
Machinery and other heavy loads can be carried and maneuvered into the tightest spots. You can make 90° turns, or ANY kind of turn easily up to 360°. As in this example...

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.

2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.

3. If a longer movement is necessary, power is used to pull load.

Let us show you how MULTITON can meet your specific needs. Write for Bulletin F today.



95 MADISON AVE., NEW YORK 16

MU 3-4935

# STOKVIS & EDERA & CO., INC.

Circle No. 128 on Reader Service Card for more information

### Magnesium Dock Boards:

"Look Into These Facts About Dockboards" is the title of a new "facts file" prepared by Magnesium Company of America. Rather than placing emphasis on straight product information, it presents specific facts on magnesium dockboards used to bridge the gap between loading docks and rail cars and highway trailers. Relates the actual cost of dangerous makeshift plates, and why it pays to have a dockboard fitted to specific needs.

Circle 249 on Reader Service Card

### Hoisting—Hand and Electric:

A 12-page booklet entitled "There's a Yale Hoist for Every Lifting Job" illustrates the most suitable hoist for the big, specialized, occasional and every job for handling. Other illustrations show how Yale hoists save time, money and manpower in various industries.

Circle 250 on Reader Service Card

### Hand Operated Stacker:

Specifications and characteristics of the Port-A-Lift stacker are available in new literature by this company. Unit has 500-pound capacity, may be had with forks or platform, and is hydraulically operated.

Circle 251 on Reader Service Card

### Transmission Belting:

The Thor rayon transmission belting is illustrated and described in a four-page brochure by the Goodyear Tire and Rubber Co. The new belting has rayon plies instead of conventional cotton, and has been proven in field applications for more than four years.

Circle 252 on Reader Service Card

### Industrial Battery Service:

The service performed by engineers of the Thos. A. Edison Storage Battery Division is outlined in a four-page bulletin recently released. Entitled, "Engineering Services for Users of Edison-Equipped Industrial Trucks", the pamphlet depicts and describes services given new and long-time customers.

Circle 253 on Reader Service Card

### Diesel Engines:

Applications for Caterpillar diesel engines is covered by photographs and text in "The Power Parade" booklet, released by Caterpillar Tractor Co. In all, 28 different applications are depicted in the 8-page release. Particularly noted are construction jobs, saw mills and oil drill rigs.

Circle 254 on Reader Service Card

### Die-Handling Trucks:

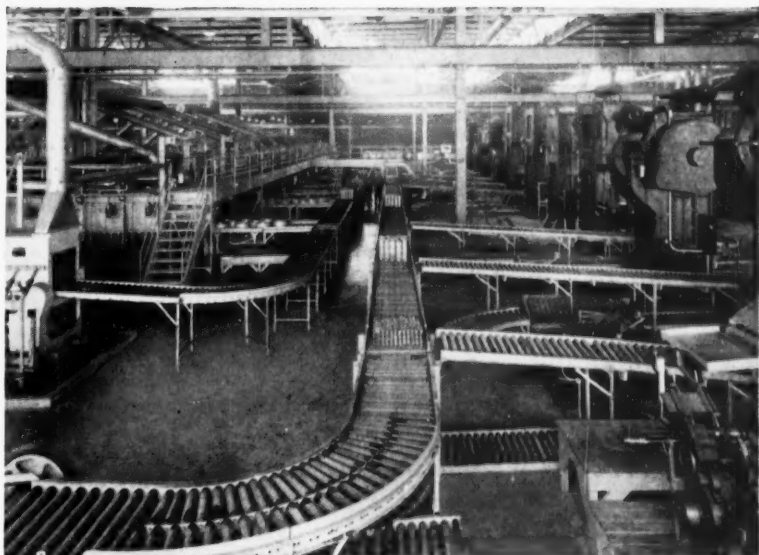
A unique die handling truck has just been added to the line of equipment manufactured by The Raymond Corporation. Descriptive literature gives the complete story on handling dies weighing up to 1½ tons.

Circle 255 on Reader Service Card

### Conveyor Movie:

"Conveyors Only LOOK Alike", a new 16mm sound, color film, describing Barber-Greene's complete line of portable belt conveyors, has been released by that company. Almost 50 different applications feature the equipment and its application to the fields of handling heavy abrasive bulk materials.

Circle 256 on Reader Service Card

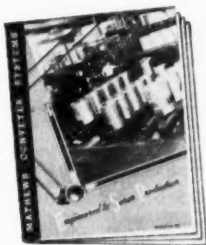


## ROLLER CONVEYERS

ONE OF THE MANY TYPES OF HIGH-QUALITY  
POWER AND GRAVITY CONVEYERS IN THE  
MATHEWS LINE

● Whatever the package you are handling — whether its weight is measured in pounds or tons — there is a Mathews Roller Conveyor of the right capacity to handle it.

With a range of roller sizes reaching from 1" to 6½" and capacities from 50 pounds to 16,000 pounds, the Mathews Roller Conveyor line is complete. That's why we say, "If it's a roller conveyor job, it's a natural for Mathews engineers."



Write for Catalog No. 151 for complete details of roller and wheel conveyers, and for Catalog No. 853 which features numerous installations that might help with your conveying problems. Both are yours for the asking.



## MATHEWS CONVEYERS

GENERAL OFFICES . . . . . Mathews Conveyor Company  
ELLWOOD CITY, PENNSYLVANIA

PACIFIC COAST DIVISION . . Mathews Conveyor Company West Coast  
SAN CARLOS, CALIFORNIA

CANADIAN DIVISION . . . . . Mathews Conveyor Company, Ltd.  
PORT HOPE, ONTARIO

Engineering Offices or Sales Agencies in Principal American and Canadian Cities  
Circle No. 177 on Reader Service Card for more information

### Industrial Casters:

The high quality of industrial casters manufactured by Albion Industries, Inc., is pointed out in a colorful 24-page catalog just released. Low maintenance cost and reduced floor wear are stressed. Circle 257 on Reader Service Card

### Cast Elevator Buckets:

The complete line of cast malleable and Promal elevator buckets is pictured and described in a 12-

page brochure by the Link-Belt Co. Fifty-five standard sizes are listed, together with dimensions, weights and capacities. Detailed information is provided regarding mounting on belts and chains and bucket punching.

Circle 258 on Reader Service Card

### Industrial Rubber Bearings:

A new catalog which describes the use and advantages of B. F.

Goodrich Cutless rubber bearings in industrial equipment is available through Lucian Q. Moffitt, Inc. The catalog recommends the use of Cutless rubber bearings in various types of industrial equipment, where bearings can be lubricated with water or by the liquid handled in the equipment. Bearings are made of special rubber which resists wear and heat.

Circle 259 on Reader Service Card

### Dump Trailers:

A colorful 4-page brochure has been prepared by the Red-E Tractor Company, covering its "No-Tip" Dump Trailers. The units may be adjusted to four different heights for easy loading, and are said to be fast and safe for hauling and moving.

Circle 260 on Reader Service Card

### Pallet Rollers:

The Ace "Trucker" and "Turn-A-Bout" utility pallet rollers are featured in an engineering bulletin recently released by Frank L. Robinson Company, manufacturers and distributors. Full 360 degree swivel action is a feature of this roller.

Write 261 on Reader Service Card

### Dock Problems:

The Rotary Lift Company has available descriptive literature covering its Leva-Docks, Levalator lifts and Oilhydraulic transfer bridges. Equipment is built to handle a wide range of applications, and customer satisfaction is said to be assured.

Write 262 on Reader Service Card

### Handling Costs Cut:

The theme of the fall issue of "Handling Materials", published by Towmotor Corporation, is savings. Particular plant problems are illustrated, and an interesting feature is the savings of more than \$50,000 in one year by a company using six fork trucks.

Write 263 on Reader Service Card

## WAYNE CRANE



... first choice with industry for materials handling because it has

## Full 10-ton Lift!

... on 7' 8" wheel base for maximum maneuverability. Designed for industrial yard operations—self-propelled with four-wheel drive—one-man operation—single engine powered!

Wayne Crane pioneered the wheel-mounted industrial yard crane . . . and still continues to be the leading supplier to all types of industry.

Before you buy—compare—you'll see why you can't beat the performance of a Wayne Crane!



Also available: 8-ton Model 66  
12 1/2-ton Model 40

FREE—Write today for a copy of the new "Handbook of Data for the Proper Selection of Industrial Yard Cranes."

**WAYNE CRANE DIVISION**  
**AMERICAN STEEL DREDGE CO. INC. • FORT WAYNE 1, INDIANA**  
Circle No. 143 on Reader Service Card for more information



### All Steel Platform Trucks:

Complete catalog covering design, construction, appearance and performance of trucks manufactured by Laughlin Manufacturing Co., Inc., is now available.

Write 264 on Reader Service Card

### Wire Rope Clips:

Maximum safety in load fastening is said to be assured by American Hoist & Derrick Company in its colorful brochure covering Crosby wire rope clips and blocks. The three basic steps in wire rope fastening are shown.

Write 265 on Reader Service Card

### Engineered Containers:

An illustrated brochure has been prepared by the General Box Company. Standard and special containers are shown, and the company's staff of engineers will make a study of your particular packaging problem and offer a savings idea, all at no cost.

Write 266 on Reader Service Card

### Excavating Machinery:

A new condensed catalog, Bulletin No. 5324, being offered by Osgood-General pictorially presents the company's complete line of material handling and excavating machinery. Condensed specifications for machines from  $\frac{1}{2}$  to 3 cubic yards are included. Osgood manufactures numerous attachments also described which add to the range of applications which can be performed by the equipment.

Write 267 on Reader Service Card

### Bulk Handling Progress:

"Industrial Handling", published by The Frank G. Hough Company, concentrates on bulk material handling progress. Featuring the Hough "Payloador", the current issue of the magazine contains a number of informative stories on various phases of bulk handling.

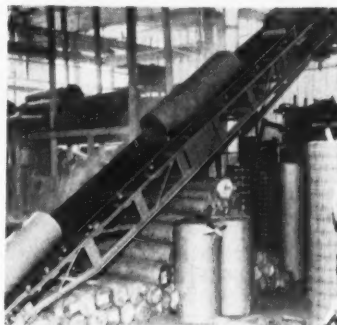
Write 268 on Reader Service Card



*He's finished work early every day since we installed those Farquhar Conveyors!*

## Let FARQUHAR Solve Your Conveyor Problems!

The complete line of Farquhar power-belt and gravity conveyors includes sizes and types for practically every requirement found in industry. Standard units, in a wide variety of models and sizes, are available for horizontal and floor-to-floor operations, in portable, semi-portable and permanent installations. Or, if your problems can't be solved by standard units, drop us a line on your letterhead, and our engineers will be glad to assist you in working out a solution. There's no obligation, of course.



Whether you move coal, gravel, sand, aggregates, boxes, cartons, bales, bundles or any kind of bulk or packaged materials, Farquhar can cut *your* handling costs to rock bottom! Want proof? Mail the coupon below!

<b>OLIVER</b>	<b>FREE!</b> "Owners Report" — a booklet of case histories showing money-saving conveyor installations.	
	<b>Farquhar CONVEYORS</b>	
<b>MAIL COUPON FOR YOUR COPY</b>		
<b>POWER-BELT AND GRAVITY CONVEYORS</b>	<b>THE OLIVER CORPORATION</b> A. B. FARQUHAR DIVISION Conveyor Dept. M-06, York, Pa.	
	Gentlemen: Please send me my free copy of "Owners Report."	
	Name .....	
	Firm .....	
	Address .....	
City ..... Zone ..... State .....		

Circle No. 48 on Reader Service Card for more information

### Drum Attachment:

A detailed catalog sheet has been released by Lewis-Shepard covering its Liftomatic Drum Handling attachment for use with its Spacemaster Electric for trucks. Installation is said to be easy with one man able to attach the unit in two to three minutes without the use of tools. There are no nuts or bolts, and it is not necessary to remove standard forks.

Write 269 on Reader Service Card

### Build-Your-Own Racks:

A 24-page profusely illustrated catalog No. 600 is available from the Unistrut Products Co. covering the wide range of rack arrangements that you can build in your own plant with your own crew from the Unistrut All-Purpose framing. They are said to be completely adjustable, completely re-usable and require no drilling or welding.

Write 270 on Reader Service Card

### Steel Framing Magazine:

"Unistrut Channel" is a periodical published by Unistrut Products Company, steel framing firm. The magazine features a combination of humor, philosophy and business, and contains a wide variety of informative subjects.

Write 271 on Reader Service Card

### Conveyor & Truck Catalog:

A 28-page catalog from The Rapids-Standard Co., Inc., lists the firm's line of gravity conveyors, powered conveyors, casters and hand trucks. Generously illustrated, the catalog contains descriptions, in-use photos and specifications of the various models.

Write 272 on Reader Service Card

### Wet-or-Dry Vacuums:

Two models of the Hild heavy-duty, portable wet-or-dry vacuum machines are described in literature from Hild Floor Machine Co. These machines can pick up either liquid or dry dirt without adjustment or change of filter. Construction details, specifications and in-use photos are included.

Write 273 on Reader Service Card

### Tubular Conveyors:


A bulletin showing engineering and mechanical details of its tubular conveyors has been released by Hapman Conveyors, Inc., Division of Hapman-Dutton Company. The bulletin illustrates the "sealed-pin chain" design, said to increase chain life and cut costs by preventing abrasive materials from reaching chain pins as the parts articulate.

Write 274 on Reader Service Card

### Truck Bulletin:

Nutting Truck and Caster Company offers Bulletin 53-SC, which lists 43 different types of floor trucks. An alphabetical and usage index provides quick where-to-find-it information; specifications and descriptions include pertinent product data plus how-to-use-it information.

Write 275 on Reader Service Card



**TURNABOUT®**  
ADJUST • A • FORK  
**HYDRAULIC LIFT TRUCK**  
with interchangeable forks

As low as  
**\$350**  
for complete truck

capacity  
2500 lb.

At last, improved design and mass production techniques give you a quality product, properly priced. The Turnabout will immediately prove its superior performance with extra strength where needed most . . . high maneuverability . . . ease of operation. Resinoid type casters and aluminum leader wheels at no extra cost.

**INTERCHANGEABLE FORKS:** Easily interchangeable forks are available in five standard lengths. They may also be adjusted on the truck frame to provide 25" or 27" width.

**UNCONDITIONALLY GUARANTEED:** The Rack Turnabout is unconditionally guaranteed against defects in workmanship or materials for one year.



#### TRUCK COMPLETE

- With either 30", 36", 40", 42", or 48" forks.....\$350
- With either 54" or 60" forks.....\$390

**RACK HYDRAULIC EQUIPMENT CORPORATION**

CONNELLSVILLE, PENNSYLVANIA  
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

Circle No. 53 on Reader Service Card for more information

### Plastic Pellet Flooring:

Literature from Flash-Stone Company, Inc., tells how the addition of natural, live rubber grains to its asphalt-rock limestone and cold asphalt emulsion floor material increases the life span of the floor, reduces brittleness in sub-freezing weather, provides greater traction when wet and lessens the tendency to rut or wave under heavy point loads.

Write 276 on Reader Service Card

### Wrapping Machine:

A bulletin from Package Machinery Company describes the Model Universal 6 textile wrapping machine which has a speed of up to 40 packages a minute and requires one person to feed it and remove the wrapped items. It accommodates a wide range of sizes, and the goods may be on flat cards, trays or in cartons. Some products may be wrapped without any card at all. Specifications and extra attachments are listed.

Write 277 on Reader Service Card

### Truck Crane:

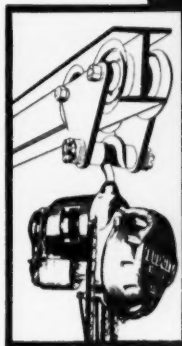
"The Thew-Lorain TL-10 Truck Crane at Work" is an illustrated booklet showing on-the-job views of the 6-ton Lorain TL-10 truck crane installations. Available from Thew Shovel Company, it describes this latest addition to the Lorain line. Full page size pictures, job data and information on the type of new or used trucks used in each instance for mounting the crane are included, as well as a variety of front end equipment.

Write 278 on Reader Service Card

### Oil Industry Hose:

An illustrated 8-page booklet describing the types of hose produced for the oil industry by Quaker Rubber Corporation, Division of H. K. Porter Company, Inc., is ready for distribution. Some of the oil hoses described in the bulletin are barge loading, oil suction and discharge (both smooth bore and rough bore), butane-propane, fuel oil, gasoline pump, tank truck, tank car, and many others.

Write 279 on Reader Service Card



## GIVE ECONOMY A LIFT... WITH THE *'Budgit'* ELECTRIC HOIST

There's one sure way to cut your load-handling costs. Use the economical 'Budgit' Electric Hoist. A few cents worth of electricity keeps the 'Budgit' going all day.

The 'Budgit' Electric Hoist is fast. A slight pull on the control cord of the 1/4-ton 'Budgit' lifts the full load a foot in less than two seconds with spur-gear efficiency.

The 'Budgit' is ruggedly built for trouble-free, safe service. All moving parts, including shafts, are heat-treated. Ball and roller bearings reduce friction and power consumption to a minimum. Separate motor and load brakes are provided — each will hold the full load automatically. The hooks won't fracture if the hoist is overloaded. Every provision is made to safeguard man, load and hoist.

No installation or accessory expense when you buy a portable 'Budgit' Electric Hoist! It comes complete — ready to hang up, plug in, and use! Capacities: 250 to 4,000 lbs. AC and DC models. Priced from \$129. Get complete details from your "Shaw-Box" Distributor or write for Bulletin 391.

A 'BUDGIT' I-BEAM TROLLEY enables any hoist to travel as well as lift the load. Tough steel construction. Ball bearings in wheels. Adjustable to fit several I-Beam sizes. Capacities: 500 to 4,000 lbs. Priced from \$15.50. Bulletin 390 mailed on request.



## *'Budgit'* ELECTRIC HOISTS

MANNING, MAXWELL & MOORE, INC.  
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and "Load Lifter" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" Industrial Instruments, and Aircraft Products.

Circle No. 84 on Reader Service Card for more information

## MEN IN THE NEWS . . .

(Continued from page 33)

### . . . at Cambridge Wire Cloth Co.

Richard C. Carmean has been appointed to the sales engineering staff in the Ohio-Michigan-Eastern Indiana territory. He will assist **Fred L. Stevenson** in sales and service work throughout this important industrial area.

### . . . at Simplex Packaging Machinery Inc.

Arthur J. Olsen has been appointed works manager recently after having been transferred from the canning machinery division where he served seven years as production and planning manager. Both firms are subsidiaries of the Food Machinery and Chemical Corp. He has been with the firm since 1946. In his new post he replaces **W. A. Wolff**, who

has been promoted to western operations manager of the John Bean Division.

### . . . at Automatic Transportation Co.

**William L. Davidson** has been named assistant to the director of industrial relations, according to **John A. Baldinger**, general manager. Davidson formerly was personnel manager for Darling Co. and Ball Brothers Co. **Roger H. Debenham** is director of the company's industrial relations program.

### . . . at Magnesium Co. of America

**William Johansen**, general sales manager, has been elected vice president in charge of sales, according to **Miles L. Abel**, executive vice president. Prior to his appointment as general sales manager two years ago, Johansen had served as southwestern division manager.

### . . . at Atlas Plywood Corp.

**Charles A. Johnson** has been named assistant director of research and development. He will have headquarters in the company's laboratories at Lawrence, Mass. The creation of this new post was brought about by the firm's expanded activities in the plywood container field.

### . . . at Stone Container Corp.

**J. R. Boykin** has been promoted to general manager of the paper mill division at Mobile, Ala, according to **Marvin N. Stone**, vice president in charge of production. He has been associated with the mill since the end of World War II.

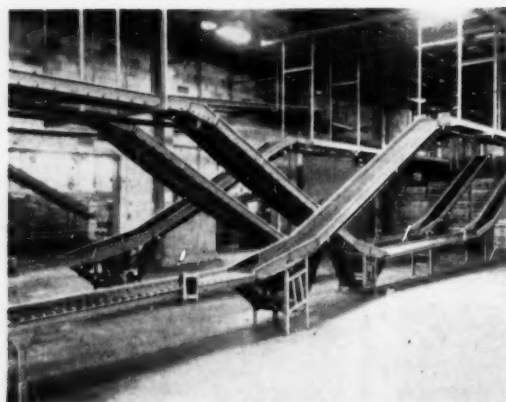
● **BUSY**, Bustling Cincinnati—where executives, plants, conveyor lines, work night and day to satisfy the ever growing demand for valves, machine tools, soap, television sets, radios and A-F Engineered Conveying Systems

# Cincinnati

home of

# ALVEY-FERGUSON

*the original—Since 1901*



**WHERE THE  
WORLD'S BEST  
ENGINEERED  
CONVEYING  
SYSTEMS  
ARE MADE!**

Alvey-Ferguson Engineers  
All Types of Conveying  
Systems For All Types  
of Industry

For a discussion of latest scientific handling methods write



**THE ALVEY-FERGUSON COMPANY**

434 Disney Street

Cincinnati 9, Ohio

Offices in Principal Cities

Circle No. 3 on Reader Service Card for more information



## SCALE MODELS . . .

(Continued from page 71)

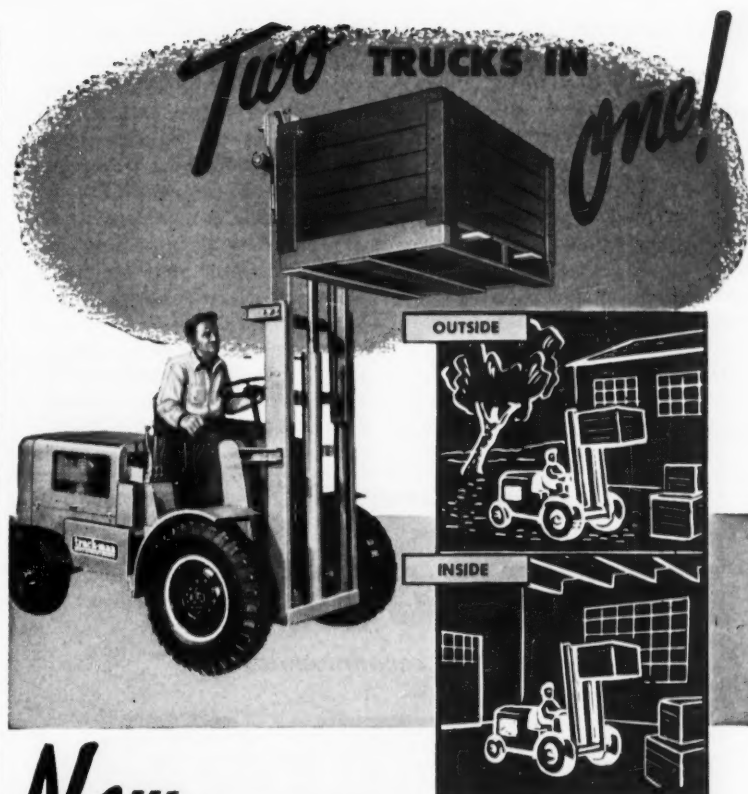
result, an efficient use has been made of the space and obstructions which might have proven troublesome (for instance, an overhead conveyor which travels over the area to connect two buildings) have been installed where they don't interfere.

To study requirements of freight car loading docks which have been placed adjacent to a warehouse building, a model freight train was purchased. As a result of observations of the model in the mock-up plant, loading is extremely fast and economical. Twelve loading docks are located in this area, and a dozen freight cars can be loaded before car switching is required. Since twenty-four cars will hold an entire day's production of refrigerators, only two switching operations are needed per day.

### Three Production Lines

A brief description of the production lines for refrigerators at Admiral reveals benefits which have resulted from thorough pre-planning on the scale model. In laying out the plant, it was obvious that three definite fabricating lines would have to precede assembly of refrigerators. One line was set up for door panels and another for exterior cabinets. Since both these components are painted, production lines had to be routed through the paint shop and bake ovens. The third production line which was set up is for fabrication of interior or food liners for the refrigerators. These units are porcelainized after being made, and therefore, it was necessary to plan their path so that it went through various dipping and high-temperature baking operations. All three lines terminate at the same final assembly area, however.

The Galesburg plant has sufficient storage area to warehouse approximately 8000 tons of steel, equivalent to 75,000 refrigerators. Taking advantage of the reduced costs achieved by buying steel sheets in "multiple" sizes, the company shears steel for doors to the sizes required for various press



## New truck-man MODEL 40

**THAT'S RIGHT!**—The Model 40 High Lift has the power, traction and footing to really do a job outdoors.

**PLUS**—The maneuverability (72" turning radius), compact design and special features for top efficiency in material handling indoors; whether stacking in the warehouse, loading and unloading cars or trucks, or intra-plant service.

### ECONOMICAL TO MAINTAIN FOR THREE BIG REASONS

- 1 RUGGED**—The big Ford Engine, oversized clutch, heavy duty transmission and axles insure less maintenance.
- 2 ACCESSIBLE**—The tilt cylinder is mounted above floor decking for easy adjustment or service. Engine, clutch, transmission or axles are removed in a jiffy for bench repairs.
- 3 STANDARD FORD PARTS**—Serviceable at any Ford garage, include: hydraulic brakes, engine, differential, clutch, drive axle, and wear parts of steering axle.

Write or check coupon and mail today for catalog with complete details on the Model 40 and 8 other versatile Truck-Man trucks.

**truck-man**

Div. of The KNICKERBOCKER CO.  
582 Liberty St., Jackson, Michigan

- ☐ Have Salesman Call  
☐ Send Catalog and further information

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

Circle No. 136 on Reader Service Card for more information

## SCALE MODELS

*Continued*

operations. This sheared stock is then deposited by overhead crane at the head of the particular press line for which it is intended.

In the press room, there are 48 presses, ranging from 30-ton units to a huge 750-ton press which is used for drawing door panels. Two overhead cranes service the 600 by 50 foot room.

After doors have been stamped,

they are placed on specially designed carriers on a continuous overhead conveyor which runs from the press room to a storage area and back to the press room. Storage is provided for by the conveyor through a series of loops which provide enough capacity to permit variations in the rate of production of the press room and subsequent operations, without any effect on either.

Adjacent to the door storage area is a small department where

hinge holes and holes for nameplates are punched in the door panels by a hydraulic piercing unit. Doors on the overhead storage conveyor continue to make the circuit back through the press-room until taken off for the piercing operations. Then, the panels are placed in a welding machine which squares and aligns the door and holds brackets and channels in place during the welding operation. Following this, they are moved on a belt conveyor through a metal finishing and inspection department and then onto a conveyor which carries them to the paint department.

### Cabinets

The cabinet of the Admiral refrigerator is an all-welded unit. Steel sheets for the cabinet are received and conveyed directly into a shear where all holes are pierced and where it is stamped to size.

An ingenious device, worked out by Admiral's engineers has simplified the transfer of steel from the brake press to subsequent operations. It is simply a roller conveyor section at table height, mounted on flanged wheels and rolling sideways on lengths of railroad track. The side of the conveyor can be butted against the press to permit finished material to be moved onto it quickly and with a minimum of effort.

Then, with the loads of sheets, the roller conveyor section can be moved sideways along the tracks until one end lines up with the end of one of three other roller conveyors. Two of these conveyors are for storage and the third leads to a Yoder Roll machine which forms front and back flanges for the cabinet.

Sheets are then conveyed directly to a tangent bender which shapes them into giant U's. (The bottom of the U later becomes the crown of the completed refrigerator).

All production at Admiral has been planned with an eye to efficient handling. At no place is it more evident than in the cabinet fabricating line. After a back section has been welded on the U-shaped wrapper, the unit is placed on a slat conveyor which has precision tamplates for squaring-up purposes. There, while the con-

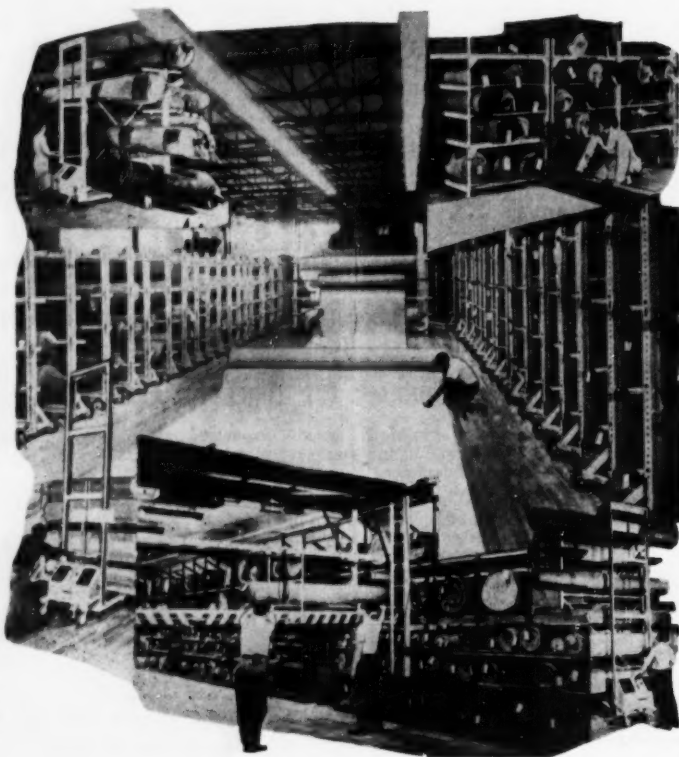
MOHAWK CARPET MILLS • THE EMPORIUM • MAY COMPANY • JAEGER & BRANCH

RENARD LINOLEUM & RUG CO. • WM. VOLKER • GIMBEL BROS. • B. ALTMAN & COMPANY • JOHN BREUNER COMPANY • BULLOCKS

America's Leading Carpet Mills, Distributors  
and Retailers who use

**EASIQUIP** for Handling and  
Storing Broadloom  
Carpet

are our best recommendation



Write Concerning our Free Layout and Engineering Service  
and Name of Nearby Representative

### EASIQUIP COMPANY

1522 No. Indiana Street • Los Angeles 54, California

Manufactured by the Makers of Roberts SMOOTHEDGE

BIGELOW SANFORD CARPET CO. • ROSENFELD COMPANY • DOWNS CARPET, INC.

Circle No. 43 on Reader Service Card for more information

C. H. MASLAND & SONS • W & J SIOANE • STIX, BAER & FULLER CO. • L. BAMBERGER COMPANY • MACY'S • ABRAHAM & STRAUS

veyor moves, a multitude of welding operations are performed. The onetime sheet of steel emerges from that conveyor line as a completely welded cabinet assembly.

It then proceeds, on a belt conveyor through various metal finishing and inspecting operations and is finally placed on an overhead conveyor which carries it to Bonderizing and painting.

#### Food Liner

The food liner of Admiral refrigerators, composed of a wrapper or body sheet, a top and bottom, follows an entirely different path than do painted parts, to the final assembly area. The operations of all lines have been coordinated, however, so that maximum efficiency and a high degree of quality control are possible at all times.

Sheet steel for lines is purchased in proper sizes and is stored until needed. As production requirements dictate, steel is moved by fork truck to the pressroom.

From the presses, the body sheets, tops and bottoms for liners feed to huge automatic welders. First, the body sheet is placed in a welder which forms and welds two back seams. Then, the liner is removed from that welder and placed in an even larger one with the top and bottom pieces located in place. Six welding wheels on the welder automatically fuse the tops and bottoms to the body sheet along six separate seams.

Liners are then placed on conveyors which move past a welding station where the only hand-welding required (corners cannot be welded by the machines) is accomplished. While still on the conveyor, all operations preparatory to pickling and porcelaining are done.

After two coats of porcelain have been applied to the liners, and firing and inspections have been completed, they are placed on an overhead conveyor line leading to the main assembly line.

#### Final Assembly of Refrigerators

All refrigerator manufacturing activities lead into the assembly area which measures approximately 600 feet by 180 feet. Its layout permits high speed operations, but

is such that slow-downs would not affect its efficiency drastically.

Two slat conveyors, traveling down the center of the area, are for the assembly of cabinets, including the outer shell, the liner and freezer unit (which is a purchased part and which only requires inspection up to this point). Total length of each cabinet assembly line is 520 feet. During cabinet assembly, skids which will later be the bottoms of shipping containers are bolted on.

Due to a great number of minor,

time-consuming assembly operations which are necessary on cabinets, a simple but very effective method was devised to conserve space and to permit conveyors to move along at a constant rate. At the point where the greatest number of these jobs are congested, each cabinet line is divided into two. For the duration of this division, there are four assembly lines.

Two door assembly conveyors, each 260 feet long travel along the outside of the cabinet assembly lines. Door panels are removed



**a Tough and ready container**



**SKID BOX**  
Specially designed for use with modern stacking and handling equipment.



**STACKING BOX**  
Stacks easily and solidly, ceiling high.



**BOX TRUCK**  
Quickly handles light or heavy materials. Maneuvers with ease.



**MASONITE TRUCK**  
MASONITE Presdwood panels. Smooth, tight, dirt-free interior.



**FOLDING BOX**  
Sturdy industrial hinges lock sides to pallet. Fold into one-fourth the space for storage or shipping.

*All Lewis Containers can be equipped with covers.*



**LEWIS**  
INDUSTRIAL CONTAINERS

**THEY'RE BUILT TO LAST**

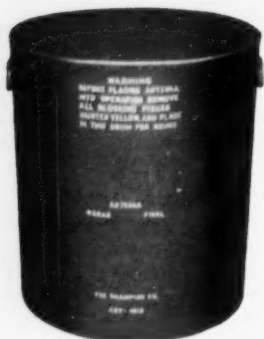
Look at the structure . . . resilient slats of select North-ern elm bound with steel wire . . . framework of hard-wood is locked by dovetailed joints and reinforced with 3-way corner irons. These Lewis Containers chal-lenge the toughest materials handling problems for the speedy movement of heavy to light weight ma-terials. Write for folder.

Representatives from Coast to Coast

**G. B. LEWIS CO., 6034 Montgomery St., Watertown, Wis.**



## Shipping Containers DESIGNED TO FIT YOUR PRODUCT



Hermetically Sealed

A **REUSABLE** shipping container can be designed and produced for your product, regardless of size or shape . . . with perfect protection for shipping and storing. If you are interested in perfect protection for your product, and at the same time reducing your costs . . . Write to

**THE CHAMPION  
COMPANY**

SPRINGFIELD 99, OHIO

Circle No. 26 on Reader Service Card  
**152**

## SCALE MODELS

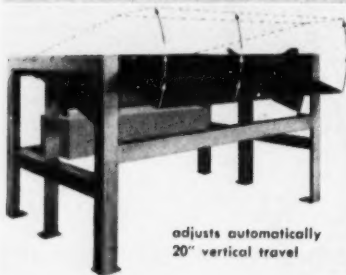
*Continued*

from the conveyor which has carried them through production and painting, and are either deposited on the assembly conveyors or on storage racks spotted close by.

After doors and cabinets have been completely assembled, they are brought together on the two center conveyors and doors are installed on refrigerators. Then, the units are plugged into an overhead electrical trolley and run for 20 minutes each as the travel. During that time final operations, such as the addition of evaporator doors, light bulbs and lock strikes, are completed. In an insulated room through which the conveyORIZED refrigerators pass, they are tested for quietness and leaks. They continue right-on to the packaging area, now on only one conveyor, after inspection.

In the packaging department, shelves, crisper drawers, drip and ice trays are installed, and blocks

## Christensen FLOATING DOCKS



### SAVE TIME — LABOR — MONEY

Now it is possible to double your loading and unloading efficiency by installing the new, inexpensive Christensen Floating Dock. Its design provides for up and down counter balance movement to meet varying truck heights. The Self-Contained Unit needs no support and may be placed in front of an existing dock or in a prepared pit. The Basic Unit is recessed into old or new loading platforms and is easy and inexpensive to install.

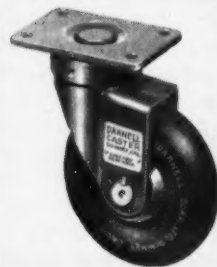
For complete line data, write  
**WM. CHRISTENSEN CO., INC.**  
DEPT. F-54, YORK, PA.

Circle No. 171 on Reader Service Card

## DEMAND

the  
**CASTERS & WHEELS**  
that  
Always **SWIVEL**  
and **ROLL**

MADE BY  
**DARNELL**



Enjoy the advantages of easily movable equipment, full protection of floors and the elimination of damage to equipment due to wracking, at no additional cost over ordinary casters and wheels.

**FREE  
DARNELL  
MANUAL**

**DARNELL CORP., LTD.**  
DOWNEY, (Los Angeles County) CALIF.

60 Walker Street, New York 13, N.Y.  
36 North Clinton, Chicago 6, Illinois

Circle No. 39 on Reader Service Card  
**FLOW • MARCH, 1954**



to provide protection in the package are bolted onto the backs.

A unique turning mechanism has been devised to carry skidded refrigerators around a 90 degree turn to nailers who construct panel boxes right around the product. The turning mechanism consists of a powered roller section on a swivel. As a refrigerator passes over, to the far side, it strikes a stop switch which turns on an electric motor. The roller section is turned a full 90 degrees and powered rollers move the unit onto another conveyor which goes to crating. Then, the turn section returns to its original position to take another refrigerator.

From the time raw materials first are received at the plant until completed units are ready for shipment, movement is simple and efficient. At this plant, one is struck by the absence of complicated "Rube Goldberg" devices which so often creep into large production facilities. Without a doubt, a large share of the credit can go to intelligent use of the company's scale model.

## MOVE MORE FOR LESS WITH MICRO LEVER-DOLLIES

Made in Three  
Handy Sizes

Usually Purchased  
and  
Used in Pairs

Reasonable  
in Price and  
Guaranteed

Finest  
Materials  
and Work-  
manship.

After  
First  
Use You'll  
Wonder  
How You  
Ever Got  
Along With-  
out Them

Write for  
complete  
descriptive  
circular

**MICRON, INC.,**  
Dept. F  
BETTENDORF, IOWA

Circle No. 93 on Reader Service Card  
FLOW • MARCH, 1954

Circle No. 38 on Reader Service Card for more information

## NOW! SHAFT DRIVE POWER in LIGHT hauling!



TOTAL  
OPERATING COST  
3/4¢ PER MILE

- EXTRA POWER
- EXTRA CAPACITY
- EXTRA ECONOMY

*Cushman*

**780  
SHAFT DRIVE  
TRUCKSTER**

Slash inner plant handling and delivery costs as have hundreds of other plants. Put Cushman 780 TRUCKSTERS on your jobs—NEW this year with SHAFT DRIVE. Complete with 3 speeds forward, one reverse. Get the EXTRA power advantages of big vehicle shaft drive—plus quick, easy handling AND low operating cost—less than a penny a mile. With capacity up to 500 pounds, TRUCKSTER can speed up hundreds of handling jobs for you!

- Write for FREE illustrated booklet
- See Your Nearest Cushman Dealer for FREE demonstration

SOLD and SERVICED NATIONALLY

**CUSHMAN MOTOR WORKS, INC.**

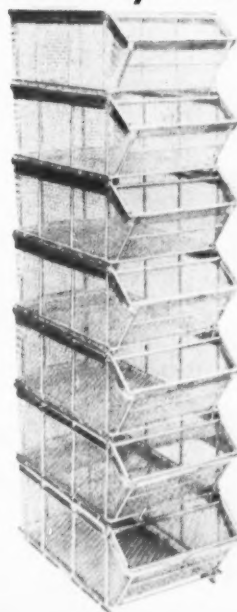
904 No. 21st St.  
Lincoln, Nebraska

## Increase Your Handling Efficiency with Jaxon Open Mesh Baskets

### 10 JAXON FEATURES

- Durable as sheet metal
- Woven wire liner with solid corners
- Self-cleaning, self draining
- Rigid welded frame with floor runners
- Eliminate dirt and chip accumulation
- Permit weigh counting in production containers
- Eliminate handling damage
- Allow continuous carrying from production machine through degreasing to inventory
- Easily stacked for pallet transportation
- Open end makes parts in storage readily accessible

Write for literature  
and complete information



**JAXON WIRE PRODUCTS**

PHONE 3-4373 1705 PROBERT ROAD JACKSON, MICH.

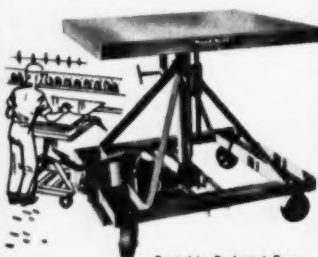
Circle No. 77 on Reader Service Card for more information

take the back-breaking  
**LIFT**  
out of the Heavy Jobs...  
WITH

## Weld-Bilt HYDRAULIC LIFT TABLES

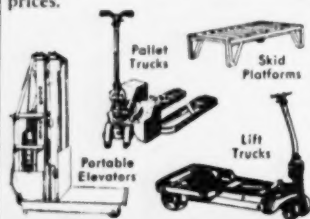


Heavy Duty Table with Electric or Manual Control



Portable Pedestal Type for loads to 2000 lbs.

You don't need "muscle-men" for handling heavy dies, sheet steel, or big machined parts, when you have new WELD-BILT Hydraulic Tables on the job. Just adjust the Table to loading height, slide parts on easily, without tugging or lifting. Then just move to press or machine position, raise or lower to working height—fast, easily. Heavy duty WELD-BILT Hydraulic Lift Tables, with foot pedal and push button, or foot pump control, handle loads up to 10 tons. Portable Pedestal type Tables handle loads up to 2000 lbs. Write for latest bulletin and prices.



## WEST BEND EQUIPMENT CORPORATION

Materials Handling Engineers

335 Water Street, West Bend, Wis.

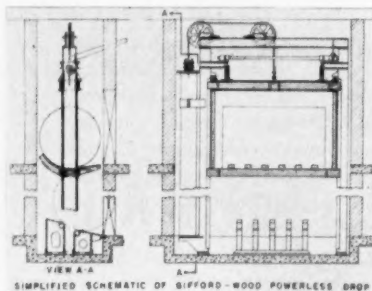
Circle No. 174 on Reader Service Card

154

## Carries Cylindrical Loads

Cylindrical loads are carried from one floor to another and automatically discharged by a powerless drop manufactured by the Gifford-Wood Company. Loads may include drums, barrels, rolls of cloth, rubber and paper, sectional beams and similarly shaped materials.

The load is rolled on the carriage and descends to the floor below when the release lever is pulled. The drop is cushioned by a counterweight piston inside a pneumatic cylinder. As the counterweight weighs more than the empty carriage, it moves it back up for the next loading. Needle-valve openings in the pneumatic system control the rate of ascent or descent.



Carriage guides ride along replaceable plates mounted along the sides of I-beams that form the framework of the drop.

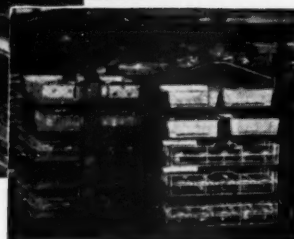
Write No. 314 on Reader Service Card for more information

## Handling: Small Production Parts Bench to Bench Without Trucking

**ALWAYS**



- at the right work bench
- at the right time for the operation
- at the right level to receive or discharge work parts



## THE ALLIED 2-28 CONVEYOR

A traveling, stock conveyor that carries diversified small work parts to and from points of operations. It goes here and there smoothly, tucked away in small spaces; passes work benches at proper level for discharging and receiving parts.

It eliminates hand traveling and confusion of distributing parts to various, separated points of operation.

The 2-28 is an interesting conveyor and it steps up production. Ask us about it for your plant.

## ALLIED STEEL AND CONVEYORS, INC.

17381 HEALY AVENUE • DETROIT 12, MICHIGAN

ALLIED DOES THE WHOLE JOB... FROM BEGINNING TO END!

Circle No. 2 on Reader Service Card for more information

FLOW • MARCH, 1954

## Truck Triples Storage Space

**S**TORAGE space has been tripled and handling time sharply reduced with the use of one 2,000-pound capacity fork lift truck in combination with standard size, slat-type double-faced pallets for the moving of bagged chemicals and fabric bales at the Hanes Dye and Finishing Company, Winston-Salem, N. C.



The 50-pound bags are palletized as received, and the truck takes them to storage and tiers them two loads high. The truck supplies the dyeing department with 200 bags in 20 minutes.

Similarly, bales of gray goods are handled two and three on a pallet, and pallets tiered in storage. The entire job is handled by the truck operator and a helper.

Previously, incoming shipments of bagged materials were unloaded by a crew of men who carried them and piled them in storage.

In this operation four man hours are saved. Three man hours for every hour the truck works are saved by the truck in handling gray goods. Approximately three times the number of bales are now stored as compared with number stored previously.

Write No. 315 on Reader Service Card for more information

## NEW LONDON TROUGH BELT CONVEYOR

for REDI-MIX,  
SAND, GRAVEL,  
DIRT, SALT,  
CHEMICALS



- LOW COST
- LIGHT • PORTABLE
- VERSATILE • DEPENDABLE

Handles your BULK MATERIALS. Gas or electric drive — 12" Belt, standard lengths 18', 24', 30'. Low maintenance. OTHER CONVEYORS for boxes, bags, bricks, blocks, bundles, beer, coal, metal parts, chemicals.

WRITE FOR CATALOG.

**NEW LONDON ENGINEERING CO.**  
TEL. 424 • DEPT. F • NEW LONDON, WIS.

Here's the **LIFT**  
that **LOWERS** Costs

Move Loads Between Levels

with a **SERVICE ELECTRAULIC LIFTER**



Service "Four-Poster" Lifter eliminates long, space-wasting ramps and takes strain off men and mobile equipment in moving loads between floor levels. Used as a dock hoist, it speeds up loading and unloading of trucks and boxcars. Operates smoothly from an electric-hydraulic power unit de-

signed for continuous operation. No pit is required—it's easy to install indoors or out. Lifters are available with capacities to 12,000 lbs., platform sizes 5 to 12 ft. and for lifts 5 to 17 ft. Both portable and permanently-installed units. For more detailed information, write today, for Bulletin 51.

See **SERVICE** for "Specials"

Versatile design of Service's wide range of Lifters, Levelers and Lift-ables permits them to be made up as semi-specials to fit your exact needs. We'll be glad to help you with your lifting problems.

Keep **MOTOWIFT** in Mind!



It's the fork lift truck so good that military needs take all we can make. Soon, we hope, you will be able to buy it again—the best truck for most jobs in most plants. Keep Motowift in mind.



**SERVICE CASTER & TRUCK CORP**

Executive Offices: Albion, Michigan • Plants at Albion, Michigan and Somerville 43, Mass.

SEE YOUR CLASSIFIED TELEPHONE DIRECTORY FOR NEAREST DISTRIBUTOR

Circle No. 130 on Reader Service Card for more information

**E**stablished Canadian Manufacturer of Overhead Cranes, Hoists and Conveyors, now engaged on a comprehensive programme of expansion, seeks connection with an American Manufacturer of Industrial Trucks and Floor Cranes interested in developing the Canadian market on the basis of having his products manufactured in that country.

Reply in confidence to our auditors:

**Price Waterhouse & Co.**

*Chartered Accountants*

ROYAL BANK BUILDING  
TORONTO 1, CANADA

## WHAT'S NEW IN EQUIPMENT . . .

(Continued from page 44)

### Portable Positioner

Designed to lift plates, weldments, castings and all heavy machinery and equipment, the Gonser Portable Positioner is offered as a special tool that combines wedge, screw and toggle to form a powerful, safe, gripping unit. Its manufacturer, The James Campbell Smith Co., Inc., says the device will lift a load into any desired position and remain clamped on through any number of operations, saving time and increasing efficiency. The tool is claimed to eliminate chains, pry bars, ropes, eye bolts, blockings and "C" clamps. A long shackle allows 360 degree movement. Cadmium plated for visibility, cleanliness and rust-proofing, the device is available in two sizes—zero to 2 inch and one to 8 inch jaw opening and 2 ton capacity. Write 280 on Reader Service Card for more information



## SELECT A *Sterling* THAT FITS YOUR JOB!



**TUBULAR STEEL FRAME**

(Above)  
Model D3 1/2 S Maximum Capacity 3 1/2 cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Steel channel legs. V-shaped front braces and brace support.

**12 SPOKE STEEL WHEEL**

There's a Sterling Barrow for every type of hauling job, whether it's dry, bulky materials like sawdust or heavy industrial loads like castings or steel parts. Also special barrows for brick, tile, coal, concrete block and similar materials. All barrows are scientifically designed, well balanced and sturdily constructed for a long service life. Choice of wood handles or tubular steel frame, steel wheels or pneumatics. Write for new Sterling Wheelbarrow Catalog No. 61.



**PNEUMATIC TIRED WHEEL**

**WOOD HANDLE BARROW**

**IMMEDIATE SHIPMENT**

**DEALERS:** Want to sell quality wheelbarrows? You can on our non-exclusive basis. Write for details.

**STERLING WHEELBARROW CO., Milwaukee 14, Wis.**

Look for this Mark of **STERLING** Quality

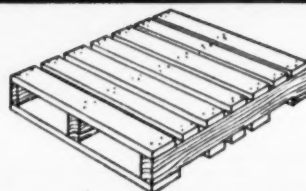
**Sterling**  
WHEELBARROWS



A 5714-3/5-R2

## CARDINAL PALLETS

For Longer Service



**We Build Highest Quality  
PALLET BOXES  
DIVIDERS**

using:

**Kentucky Hardwoods  
Pre-drilled Boards  
Steel Drive Screw Nails**



**HOPKINSVILLE  
PALLET COMPANY, Inc.**

6432 CASS AVE. • DETROIT 2, MICH.  
PHONE TU 1-7474 OR TR 1-4800

Circle No. 127 on Reader Service Card for more information

Circle No. 68 on Reader Service Card



### Bulk Handling

The Model 20 Shovel loader handles up to 1500 lbs. of bulk material in its 12-cubic-foot loader bucket. The loader bucket lifts to 7 ft. height; has 90 in. turning radius; is gasoline powered with maximum 14 mph travel speed; has 4 forward and one reverse speed;

loader boom arms are up front, assuring operator safety; spark arresting muffler and Protectoseal fuel tank are standard equipment. Unit has front wheel drive, with loader bucket and machine having the same width. Manufactured by The Baker-Lull Corporation, this machine is designed for easy attachment interchange.

Write 281 on Reader Service Card for more information

### Portable Pallet Rack

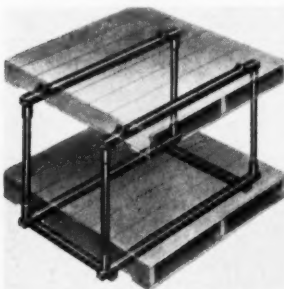
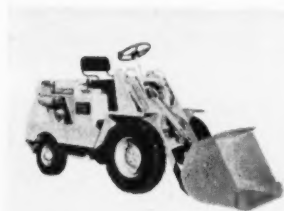
Incoming-Outgoing inventory is claimed to be considerably expedited by use of the Palteam Portable Pallet Rack. Made by The Paltier Corporation, it is said that as much as 33 1/3 to 50 percent increased space utility can be had. Unit has slip-fitting posts. Bottom pallet can be

set in or removed from rack with fork truck, or rack and pallet can be picked up and moved as a unit. Can be built for any size pallet and almost any capacity. Posts also are available in any desired length.

Write 282 on Reader Service Card for more information

### Hydraulic Dumping Attachment

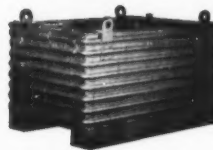
A hydraulic dumping attachment for Yale fork trucks has been announced by the Materials Handling Division of Yale & Towne Manufacturing Co. Unit permits controlled dumping at any height, up to the maximum lift of the truck and without any loss of lift. Specifically designed for use with drop bottom boxes, the attachment hydraulically raises the rear end of the box through a hook engagement independent of fork action. Exact



**Here's why**  
logged BRUSCO  
handling equipment  
increases efficiency

### No. 558 BRUSCO CORRUGATED STEEL BOXES

Save floor space — stack safely from floor to roof. Four way entry for fast, efficient handling. Equipped with crane lugs for movement by crane. Fabricated from heavy gauge corrugated steel to give added rigidity and maximum strength. Thoroughly and securely arc welded for longer, maintenance free life. Made in various sizes and load capacities to suit your requirements.



### No. 559 BRUSCO CORRUGATED SKID BOX

Saves valuable floor space and speeds production. Made in all sizes and various gauges of steel to fit any load capacity. Stack from floor to roof.



### No. 1210 BRUSCO SELF DUMPING HOPPER

Speeds production and saves labor in handling parts and materials in your plant. Easy to move and simple to operate. Hopper is fabricated of heavy steel plate thoroughly reinforced. This unit is equipped with a new, cast steel rocker and hardened pins for longer service. Made in 1/2, 1, 1 1/2 and 2 cubic yard capacities. Underclearance optional.



Write today for new Bulletin No. 500 presenting the most complete line of Part Boxes and Brusco Self Dumping Hoppers on the market.

**Brusco**

HANDLING EQUIPMENT

BRUMMELER STEEL PRODUCTS CORPORATION

1410 Ionla Ave., S. W. Grand Rapids, Michigan  
Circle No. 158 on Reader Service Card for more information

Circle No. 79 on Reader Service Card for more information

## DEALERS! Here's a truck that will make you . . . EASY SALES - BIG PROFITS



Incorporates the best in design, construction, appearance & performance.

All welded steel, including smooth sheet deck. Pressure lubrication for casters & 8-in. mold-on rubber tired roller ball bearing wheels.

### OVER 200 MODELS to choose from

Deck sizes from 24x36 to 30x60, capacities to 2200 lbs. Many types of end racks & attachments.

**SELLING PRICES**  
\$49.77 to \$72.73

Write for complete catalog today!

Manufactured from the raw material by

**LAUGHLIN MANUFACTURING CO., INC.**

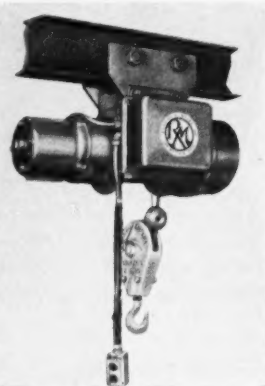
5157 S. HALSTED STREET (Drexel) 3-04201 • CHICAGO 9, ILLINOIS

spilling position can be maintained at all times and load can be raised to maximum height of the lift, since forks and front of box bottom are at the same height while dumping the load.

Write 283 on Reader Service Card for more information

### Electric Hoist

A Type J-3 electric wire rope hoist is shown as a completely new addition by the Hoist & Crane Division of Robbins & Myers. Either single or double speed push button magnetic control is available. Specifications are listed as 2 tons capacity; 2 h.p. totally enclosed ball bearing motor; 2 parts of  $\frac{3}{8}$  in. cable 6 x 37 reeving; 18 ft. lift without overwind; overwinding allows 25 ft. lift; upper and lower limit switches; single unit casting aluminum alloy frame; Weston type load brake, featuring non-reversing clutch. Hoist is available with plain, hand-gear or motor-driven trolley.



Write 284 on Reader Service Card for more information

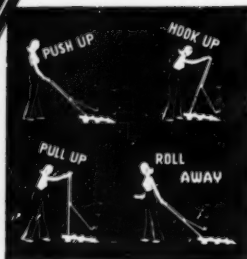


## "THE HAUL-MARK" OF EFFICIENCY

When you're hauling heavily laden tote boxes, human muscles and tendons must be protected . . . and that's where "George" takes over. No box lifting, no strain . . . mechanical leverage easily glides boxes over beveled edge of truck and onto upper set of rollers. Handle hook holds boxes in place. Loaded truck is then safely hauled to destination on set of lower rollers. This almost-automatic truck is low-cost . . . compact, rugged, safe, for long, steady service life. Metal working plants can use several or many units. Your first "George" will sell you more. Details on request.



### THE TOTE BOX TRUCK



LET "George" DO IT

IRG54A

\* TRADEMARK

Write for free Folder F

**ROLOCK Inc. • Fairfield, Conn.**

Circle No. 116 on Reader Service Card for more information



**HEMCO-MOTIVE**  
WORLD'S SMALLEST LOCOMOTIVE

### To SPOT and SWITCH RAILROAD CARS

Weights 1 1/4 tons—Fluid Drive for easy handling. Freight car weight transferred by hydraulic lift to HEMCO-MOTIVE! Maximum drawbar pull of 7,400 lbs. Power to spare! Easily handles cars around curves—over switches! Moves easily overland on big pneumatic tires! LOW PRICE—LOW MAINTENANCE—LONG LIFE

**HEMCO-MOTIVE**  
TO SOLVE MANY OF YOUR  
MATERIALS HANDLING  
PROBLEMS—Economically

Illustrated  
Brochure on Request

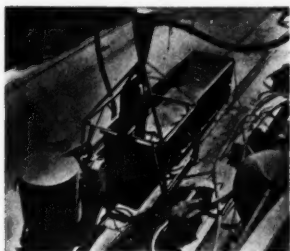
**HEMCO**  
MFG., INC.  
ARGONIA, KANSAS



Circle No. 64 on Reader Service Card  
**FLOW • MARCH, 1954**

### Pneumatic Conveyor

Called the Vacu-Veyor and manufactured by Vacu-Blast Company, this pneumatic conveying equipment is said to cut bulk material handling costs drastically. Completely automatic, only one man is needed for operation of the equipment. Over 40,000 lbs. per hour may be handled by this portable unit, which will convey up to 150 ft. vertically and 200 ft. horizontally. Masks and breather tubes are unnecessary, as vacuum draws fresh air into the area to replace expended air and materials. May be powered by electricity, gas or diesel engines. Write 285 on Reader Service Card for more information



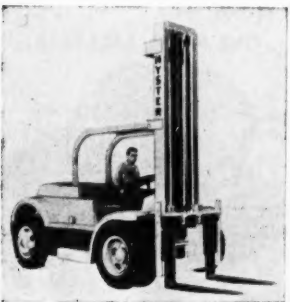
### Industrial Safety Mirror

A 24" circular convex glass mirror has been added to the line of Klear-Vu Safety Mirrors. This traffic mirror is said to be specially designed for use in factories and warehouses where blind corners, cross aisle intersections, entrances and exits present traffic problem. Mounted at a height of 8 to 10 ft., the mirror is adjustable for any degree of tension or angle. Mirror head is supported with patented 3 in. swivel stud assembly and mounting bracket. Both circular convex and flat rectangular styles are available in two sizes. Manufacturer is Lester L. Brossard Company.

Write 286 on Reader Service Card for more information

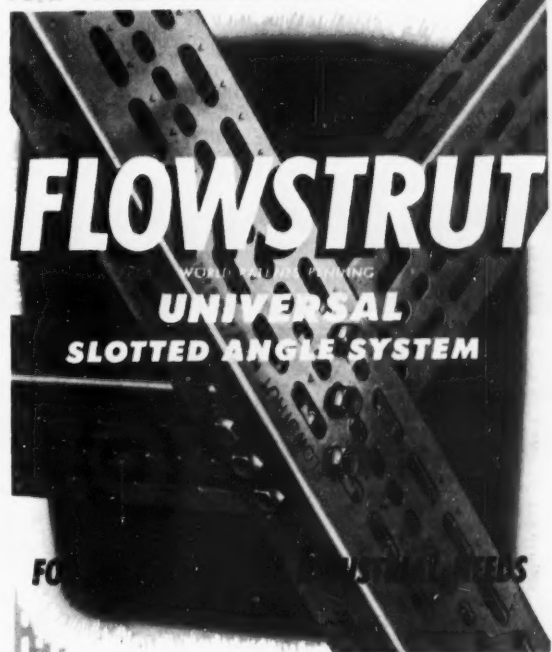
### 15,000 Lb. Lift Truck

What is said to be the latest in lift truck engineering has been incorporated into the Model RC-150, according to the Hyster Company, manufacturer. This truck has a 15,000-lb. capacity, 8.25 x 20 pneumatic tires, and watercooled industrial engine. Load center is 24". Safety, serviceability, operator comfort and ease of operation are "built in", it is claimed. The manufacturer says the truck has the



SERVICE PLATFORM AT AIRCRAFT PLANT

—for working on plane during latter stages of completion. Also maintenance at airports.



FOR INDUSTRIAL USES

### SWIFT! SIMPLE! ECONOMICAL!

No detailed drawings! No tedious measurements!  
No drilling, welding, riveting or finishing!

- 40 pre-drilled bolt holes per foot
- cutting marks at  $\frac{3}{4}$ " intervals
- requires only a wrench and a cutter
- completely salvage-able; stores compactly
- Bonderized baked gray enamel finish
- weather-proof, rust-proof
- standard equipment for your individual requirements



WRITE FOR DETAILED BULLETIN TODAY!

Distributors' Inquiries Invited

**FLOWSTRUT CORPORATION**  
21-29 Leonard Street, New York 13

Write 312 on Reader Service Card for more information

Circle No. 140 on Reader Service Card for more information



## CHAINVEYOR

**NEW  
LOW COST  
OVERHEAD  
CONVEYOR**  
of  
Revolutionary  
Design  
for loads up  
to 60 lbs.  
per foot.

Typical Industrial Installation—illustrates flexibility and simplicity of installation. System is 190 feet long with equivalent of 52 vertical and horizontal 45-degree curves. Total weight carried, 5800 lbs. Driven by 1/2 HP motor at speed of 10 to 30 F.P.M.

Nationally Distributed by  
**MATHEWS CONVEYER  
COMPANY**  
Ellwood City, Pa.  
with offices in all  
principal cities.

We can't adequately describe the advantages of CHAINVEYOR in limited space. Completely enclosed — Simplicity of design — Reduced bulk, weight — 15" radius curves — Full ball bearing chain — Curves, chain scientifically heat-treated to "file hardness" triples life — Simple rugged power drive — So easily installed that most buyers do it themselves for a total cost that is most interesting.

New catalog gives complete information  
Write for it!



**United States Spring & Bumper Co.**

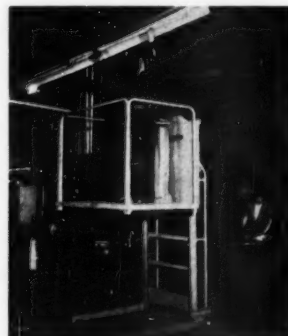
4951 Alcoa, Box 2475 Terminal Annex  
Los Angeles 38, California

shortest overall length and narrowest width in its field, with ample underclearance to allow for safe travel over rough surfaces and inclines. The truck also is available in capacities of 16,000 lbs. and 18,000 lbs., both on 24-in. load centers.

Write 287 on Reader Service Card for more information

### Maintenance Elevator

A hand operated lifting unit of 500 lbs. capacity with a 36 x 60 inch platform has been introduced by Service Caster and Truck Corp. Termed "The Bootstrapper", this unit is of the cantilever type, with hand winch mounted on the platform, thus permitting an operator to raise and lower himself while standing on the platform. It has caster steer with a foot-operated floor lock mounted between the swivel casters. The model pictured has 5 ft. lift, but higher lifts are available, with or without pipe lowering hinge to pass through doorways.



Write 288 on Reader Service Card for more information

**before you buy a fork truck or  
lift truck — be sure to see the**



Whether you're a small organization or a large plant, you can obtain extra advantages by using Market Forge Materials Handling equipment.

Consider **MARKET FORGE** — Your Best Source for: Electric or Gas Powered

- **FORK TRUCKS • PALLET LIFT TRUCKS**
- **SKID LIFT TRUCKS • TRACTORS**

Available on Deferred Payment or Rental Basis



**Market Forge**  
EVERETT 49 MASSACHUSETTS

Circle No. 87 on Reader Service Card for more information

## RAZORBACK

**Best Buy In**

## PALLETS

SMART pallet buyers all over the nation have discovered that they **SAVE MONEY** on Razorback Pallets!

Their price is right, and they save you time and money in fewer repairs and lower maintenance cost! Available nailed or bolted, heavy or light weight. Write us for details.

**Arkansas Pallet Co.**

P. O. Box 794-A Phone 6474  
PINE BLUFF, ARKANSAS



Circle No. 8 on Reader Service Card  
**FLOW • MARCH, 1954**



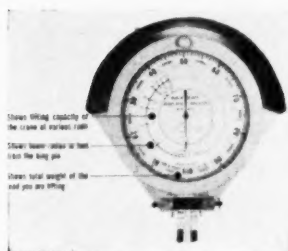
## Crane Weight Indicator

A dual hydraulic system employing a direct load pressure transducer has been incorporated in the Type SB-10 Martin-Decker Crane Weight and Radius Capacity Indicator. This system makes it possible to include all three lifting and measuring factors into one gauge. A crane operator may tell at a glance exact boom radius at which he is operating, the safe capacity of his crane at that radius, and the exact weight he is lifting in pounds, according to the manufacturer, the Martin-Decker Corporation.

Write 289 on Reader Service Card for more information

## Two-Phone Intercom

Designed for low-cost telephone-type intercommunications, the "Duo-Com" has recently been marketed by the Engineering Prods. Dept. of Radio Corp. of America. Between-phone contact is made by lifting receiver and depressing a button, thus eliminating dialing, switchboard, press-to-talk keys, etc. The Duo-Com is said by



Circle No. 72 on Reader Service Card for more information

## Industrial Underhung CRANES

feature Forged Steel Wheels with Hardened Treads



Consistent with the company policy of constant improvement in their products, the Industrial Crane & Hoist Corporation provides FORGED STEEL WHEELS with HARDENED TREADS on Industrial Underhung Model Cranes. This improvement combined with other exclusive "Industrial" features will assure longer service life and lower maintenance costs.

Industrial Underhung Cranes are equipped with patented "Industrial" removable head axles, heavy duty ball and roller bearings throughout, roller

chain flexible couplings, enclosed gear drive operating in sealed oil bath, and jig-assembled, jig-bored all-welded end trucks.

Industrial all-welded cranes are available in single and double girder types with capacities up to 20 Tons and are the outstanding crane buys in industry today.

WRITE FOR CATALOGS



### INDUSTRIAL CRANE & HOIST CORPORATION

(Formerly Industrial Equipment Co.)

531 NORTH ADA STREET

CHICAGO 7, ILLINOIS

Overhead Cranes • Jib Cranes • Monorail Systems • Crane Runways

Representatives in Principal Cities

## MATERIALS HANDLING COST REDUCTION

Let us help you find **extra profit** in your operations.

A preliminary survey — without charge will determine the potential savings and the cost.

We invite your inquiry.

**Gemar Associates**

CONSULTING  
**MATERIALS HANDLING ENGINEERS**

Greenwich, Connecticut  
Over 20 years Experience

## FULLY AUTOMATIC!

A Loader with a Mechanical Brain!



SELF-STOPPING

SELF-LEVELING

SELF-STARTING

**LOAD-O-MATIC\***

\* Pat. App. for

New, revolutionary loading platform automatically carries loads from loading dock to truck floor, whether truck is above or below dock. Can also be installed at ground level. Motion controlled by switch bar in platform and by self-leveling ramp. Human element eliminated! No hand switches!

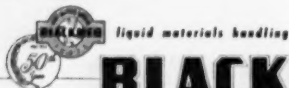
Exact levels! Models 6000 to 20,000 lbs. Write for descriptive literature.

**FIELD ENGINEERING CO., 66 Foote Ave., Jamestown, N.Y.**

Circle No. 51 on Reader Service Card for more information



Blackmer's growth has been earned by the development and manufacture of products backed by 50 years of constant laboratory and field research. These products include industrial bulk pumps, truck pumps, hand pumps, strainers and fluid motors. Blackmer's advanced design, smooth operation, economy, and flexibility of use . . . have been performance proved throughout the last half century. Wherever liquids are handled, Blackmer pumps are known for quality, dependability and record durability. And now, new products soon to be announced promise a new standard of performance. Our engineers can solve your liquid materials handling problems . . . write for details today!



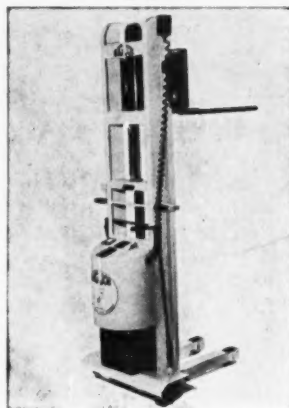
**BLACKMER**  
Industrial, Hand and Truck Pumps, Strainers, Pressure Control Valves  
**BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICH.**  
DIVISION SALES OFFICES — NEW YORK • ATLANTA • CHICAGO  
GRAND RAPIDS • DALLAS • WASHINGTON • SAN FRANCISCO  
See Yellow pages for your local sales representative

the manufacturer to increase productive and administrative efficiency, save steps and time, and free telephone lines for customer and other business calls.

Write 290 on Reader Service Card for more information

### Battery Operated Hydraulic Truck

Outstanding feature of the Big Joe Manufacturing Company "Timesaver" line is said to be a remote push button control which allows an operator to ride the carriage and also operate lifting mechanism. Maximum lifting speed of 40 ft. per minute and turning radius of 33½ ins. are also features cited. Truck has built-in automatic "trickle" battery charger which may be plugged in to any 110 volt outlet for overnight charging. A special flow regulator protects loads on downward travel, in event of hydraulic hose failure. Operating parts are easily accessible for maintenance.



Write 291 on Reader Service Card for more information



## Sales Doubled on MILWAUKEE Trucks ...but Lower Prices are Only ONE of the Reasons

### Here are Some of the others:—

- Users were quick to recognize the extra utility provided by recent additions to this growing line of medium duty, all-steel welded trucks.
- The MILWAUKEE Line is meeting the growing demand for light weight and easy maneuverability in ruggedly constructed tubular steel hand trucks and all-steel-deck platform trucks.

- The Milwaukee Line consists of 14 well designed, moderately priced models, including appliance carriers and Welding Trucks.
- Milwaukee Hand Trucks offer a choice of 3 handle types, open and closed nose plates and various types and sizes of wheel equipment to meet specific materials handling requirements.

### Write For Latest Literature

Learn why MILWAUKEE is the fastest growing line of Hand and Platform Trucks for factories, offices, stockrooms, warehouses, shipping rooms. Compare dollar-for-dollar values and you'll agree that Milwaukee offers you more.

Use the Convenient Coupon, or Write us on your business letterhead for Catalog M 123, Prices and Name of nearest distributor.

Distributors in Principal Cities



6514 W. River Parkway, Milwaukee 13, Wisconsin

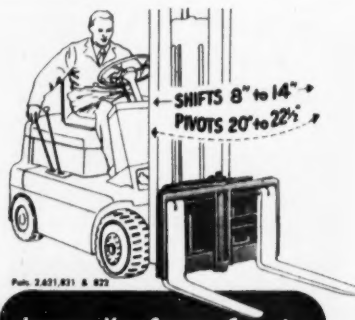
Gentlemen: Please send your Catalog M 123, prices and name of nearest distributor.

Name \_\_\_\_\_

Address \_\_\_\_\_

P. O. \_\_\_\_\_ State \_\_\_\_\_

Circle No. 95 on Reader Service Card for more information



**Increase Your Storage Capacity  
with a  
SWING-SHIFT UNIT**  
HYDRAULIC FORK CONTROL ATTACHMENT  
**ADDED TO YOUR LIFT TRUCK**

*Ask us how SWING-SHIFT:*

- Speeds car and truck loading
- Turns corners in narrower aisles and tight spaces.
- Eliminates all non-productive maneuvering
- Handles more loads per day

UNITS AVAILABLE FROM 3,000  
TO 16,000 LB. CAPACITY

See Your Lift Truck Dealer or Write

**SWING-SHIFT MFG. CO.**

P. O. BOX 957  
LONGVIEW, WASHINGTON

Circle No. 129 on Reader Service Card  
**FLOW • MARCH, 1954**

### Straddle Fork Truck Aisle Saver

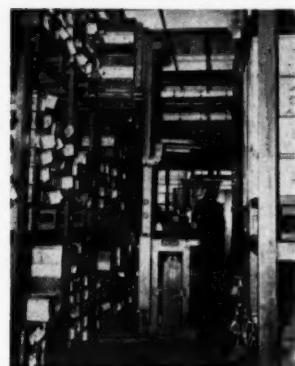
Aisle width requirements for tote box storage have been reduced from 14 to 5 feet, according to the Raymond Corporation, with their new straddle type fork truck. It has an elevated height of 127 inches and right angle stacks in a 5 foot aisle. This maneuverability is achieved through use of a single offset drive and steering wheel, compensated

by a free swiveling caster on the other side of the truck. Trucks may be had in one or two ton capacities, and all are of the stand-up rider construction.

Write 292 on Reader Service Card for more information

### Bridge and Beam Rails

The Forker Corporation states their product, Ohio Beamrail, permits extreme versatility and economy for most industrial and warehousing requirements. Thirteen sizes of beamrail are manufactured for use as straight track and bridge



Circle No. 145 on Reader Service Card for more information

**INCREASE EFFICIENCY ON YOUR LOADING DOCK WITH SENSATIONAL NEW**

# ROLLWAY

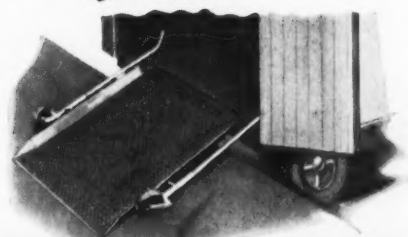
**PORTABLE STEEL DOCK PLATE**

(Patent Applied For)



The specially designed handles and wheels on the ROLLWAY Portable Steel Dock Plate make it easy for one man to move. After the ROLLWAY dock plate is in the desired position, the handles and wheels swing conveniently out of the way.

Choice of sizes and capacities.

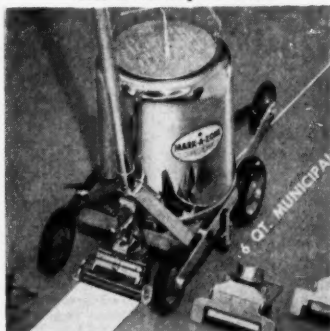


Write for complete information and prices. Distributors wanted.

**MANUFACTURED BY**  
**WOODFORD HYDRANT COMPANY**

1626 DELAWARE • DES MOINES, IOWA

**EASY TO USE**  
**MARK-A-ZONE**  
**STRIPES LIKE MAGIC**  
Up to 4" Width \$98.50 Prepaid  
Less According to Size



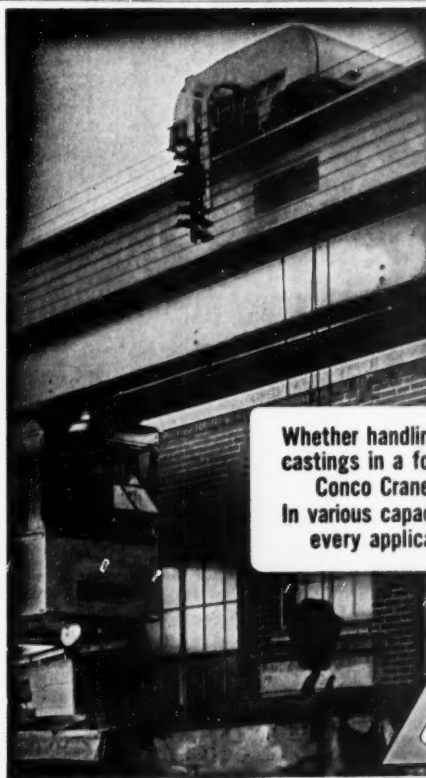
With the complete kit, including chalk and line with sketches and measurements you can do your own layout and striping. Fast operating, automatic gravity feed.  
Costs less than 2c per foot to stripe  
Perfect for inside floors and all surfaces  
Get your complete kit for economical striping  
Inquire through your local supplier or write

**S. B. BEUGLER**

3667 Tracy St., Los Angeles 39, Calif.



Circle No. 170 on Reader Service Card  
**FLOW • MARCH, 1954**



*First  
for  
Performance*

Whether handling steel in the yard, castings in a foundry, or servicing a machine shop, Conco Cranes rate first for performance. In various capacities and spans, a type for every application. Write for details.

**CRANES HOISTS**

# CONCO

**CONCO ENGINEERING WORKS**

Division of H. B. Conkey & Co., 38 Grove St., Mendota, Ill.

Circle No. 32 on Reader Service Card for more information



Circle No. 34 on Reader Service Card for more information

## FAMOUS "CHEM-BOARD" CONVOY TOTE BOXES



\*Chemically Hardened Corrugated Board

**SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS**

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made **NESTING, STACKING, VERTICAL TOTE BOXES**. Write for complete information, prices, name of distributor in your area.



### CONVOY RECORD STORAGE FILES

Sold Only by **YOUR LOCAL STATIONER**

Used by most famous names in industry and businesses of all kinds. **CONVOY "CHEM-BOARD"** files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

**CONVOY, INC.**

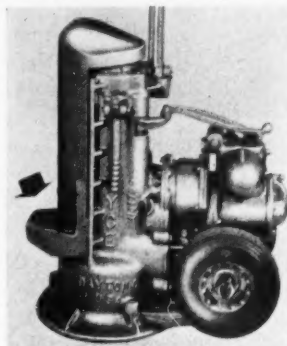
Canton 6, Ohio  
P. O. Station B, 216-F

beams in tramrail cranes and transfer bridges, thus permitting selection of the proper section for each specific span and load. Ohio Beamrail is hot-rolled as a one piece section, and is available in 1 ft. increments from 7 to 60 ft., indicating a possible 237 load-span combination.

Write 293 on Reader Service Card for more information

### Lifting Jack

Termed the "Toe-Lift", this air-motor jack is now in production by Joyce-Cridland Company. The jack will pick up a 75-ton load located as low as 9 inches from floor level and lift it 13 3/4 inches. The toe-lift feature may be removed, and the jack is capable of lifting 100 tons on top of its ram. The unit has a 5 h.p. rotary air motor, and features an automatic shutoff at upper and lower limits of the ram. The manufacturer also states that other units may be equipped with the toe-lift feature, without alteration of the jack.



Write 294 on Reader Service Card for more information



### LIGHTWEIGHT-ECONOMICAL

It's the Revolver® Portable Uplifter Elevator

Adaptable for shop use or warehouse handling and ideal for shipping and receiving—the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models—the Revolver Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

Priced under all competition, the Uplifter includes all the safety and convenience features that have made Revolver portable elevators a standard in industry. Get full information today on this new, easy operating inexpensive portable elevator. Remember, too—we build Revolver Portable elevators to your particular needs.

Write or phone

**REVOLVATOR CO.**

6738 Tonnelle Avenue, North Bergen, N. J. • Union 3-8120

Circle No. 112 on Reader Service Card



**"Fort" of Julee  
come early this year!"**

Why use high-explosive methods to open bulky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money? **THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOXCAR DOOR IN 20 SECONDS OR LESS!** A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

**Nolan One-Man Car Door Opener**

**\$3750**

Order one or more now!

F.O.B. Bowerston

**FREE LITERATURE  
THE NOLAN COMPANY**

110 Pennsylvania Street  
Bowerston, Ohio

Circle No. 104 on Reader Service Card

### Improve Your MATERIAL HANDLING!

### The 1954-55 Flow Directory

Is a **MUST** for  
Your Desk or Library

This completely new, up-to-the minute directory is the only permanent complete volume of authoritative information about material handling, packaging and shipping equipment and accessories. Its definitions are used as standard by all engineering societies, by virtually all associations, and by military and industrial groups.

The Directory's 772 pages are arranged in six convenient, thumb-indexed sections for quick, easy reference:

- Equipment and Manufacturers
- Manufacturers' Outlets
- Trade Name Index
- Engineering and Technical Data
- Manufacturers' Catalogs
- Where to Buy or Rent Equipment

**Price \$6.50**

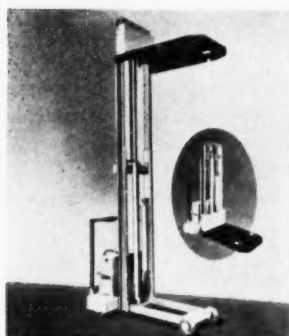
Mail your order to  
**The Industrial Book Co.**  
1240 Ontario St.  
Cleveland 13, Ohio

FLOW • MARCH, 1954



### Skid Handling Truck

Illustrated here is the Model "HHP" lift truck which has been designed by Lift Trucks, Inc., specifically for handling narrow skid platforms in crowded areas. The truck is battery-powered, and is equipped with a telescopic lift capable of tiering loads to heights of 108 inches. Capacity loads of 2000 pounds may be handled with this unit. It is claimed the truck will fill a need in small shops because of its versatility in handling skid loads both horizontally and vertically and in performing such odd jobs as positioning dies, loading trailer trucks, and others. This model is an addition to the manufacturer's Hydrolift line of equipment. Write 295 on Reader Service Card for more information



### Housings for Mobile Radio

Steel all-weather housings to protect RCA Carfone and Fleetline mobile radio communications equipment from the elements and mechan-

would you...  
put bicycle tires  
on a ten ton truck?



Of Course Not! Trucks demand heavy-duty tires . . . tires designed to do the job required.

In like manner, CORTLAND EMERY AGGREGATE was specially designed to give you strong, hard, wear-resistant, non-brittle EMERI-CRETE FLOORING® in those areas where other flooring materials fail to take the punishment imposed. Further, EMERI-CRETE FLOORING is non-absorbent and non-slip.

Our representatives will welcome an opportunity to discuss your heavy-duty flooring problems. Drop us a card or attach this ad to your letterhead and ask for your free copy of "The Romance of Emery".



Made with  
**CORTLAND EMERY AGGREGATE**  
**WALTER MAGUIRE COMPANY, INC.**

60 East 42nd Street  
New York 17, N. Y.

Circle No. 178 on Reader Service Card for more information  
**FLOW • MARCH, 1954**

*Discovered!*  
**A new kind of caster**



### the SERVICE PRESSWELD

"What is it?" you ask. Simply all the features Service has built into casters during half a century combined into one great new *quality line* of low-cost casters—SERVICE PRESSWELD CASTERS. None other combines these seven superiorities . . .

- 1—All swivel ball bearing raceways hardened to 50-C Rockwell.
- 2— $\frac{1}{4}$ " thick steel top plate and fork base, with  $\frac{3}{16}$ " thick formed steel legs.
- 3— $\frac{3}{4}$ " heat treated bolt and nut type king bolt.
- 4—Hollow bolt type axle Zerk-type lubrication fitting fully recessed in head.
- 5—Over-sized wheel bearing is  $\frac{3}{4}$ " Hyatt type roller running on  $\frac{1}{8}$ " wall spanner bushing.
- 6—Spanner bushing is  $\frac{3}{4}$ " diameter, hardened to 50-C Rockwell, ground and polished.
- 7—Available with Ni-Steel-Iron, Moldon Rubber or Molded Plastic (Mascorated Canvas Phenolic Resin Impregnated) Wheels.

**CAPACITIES**—Up to 3200 Pounds per set of Four.



Get the whole picture . . .  
Write for Circular

**SERVICE CASTER  
& TRUCK CORP.**

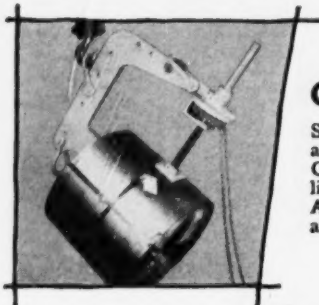
Albion, Michigan  
414 N. Brownswood Ave.  
Somerville, Massachusetts  
440 Somerville Ave.

Circle No. 121 on Reader Service Card for more information

# Coil Handling Problem?



**DIXON** has the answer!

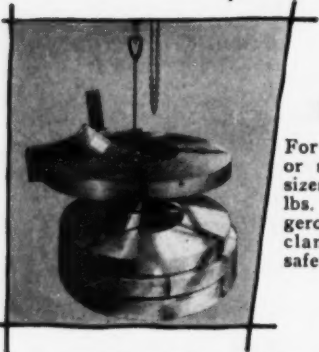
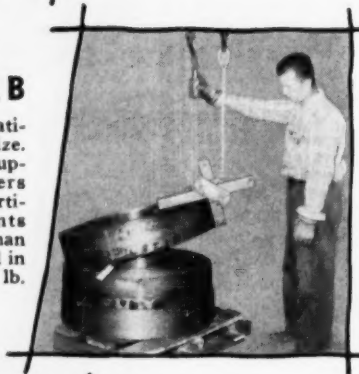


## COIL HANDLER

Save space and avoid hazards by storing coils on end. Coils up to 48" wide can be lifted, turned and stacked. Available in 7,500, 10,000 and 15,000 lb. capacities.

## COIL GRAB

Dixon Grab automatically adjusts to coil size. As crane hook moves upward the coil transfers from horizontal to vertical position. Prevents stock damage. One man can operate. Standard in 5 models up to 5,000 lb. capacities.



## COIL LIFT

For ease in lifting, weighing, or stacking coils of varying sizes and weights up to 2,500 lbs. Pry-bars, chains, or dangerous makeshift hooks and clamps eliminated. Assures safety in handling.

● DESIGNERS and BUILDERS of SPECIAL CONVEYORS and HANDLING EQUIPMENT. Difficult problems requiring originality should be referred to our engineering department for quotation.

**DIXON** Automatic Tool Inc.  
2303 TWENTY-THIRD AVE.  
ROCKFORD • ILLINOIS

Circle No. 159 on Reader Service Card for more information  
166

ical abuse are available from the RCA Victor Communications Equipment Section. Housings are of heavy-gauge welded steel construction, treated inside with a rust inhibiting primer. The cover is removed for easy inspection or servicing. The Fleetfone housing is 16 inches wide, 24 inches long, and 11 inches high, weighing 45 lbs. The Carfone case is 18 inches wide, 25 inches long, 11 inches high, and weighs 50 lbs.

Write 296 on Reader Service Card for more information

## Shiploading Conveyor

The Wehle Conveyor Company claims their method of handling will load ships three times faster than former methods used. Package merchandise is conveyed direct from the dock to top of ship by use of the Shiploader conveyor. The unit is portable and features a hydraulic lift and push button control. Capacity is 60 tons per hour. No belts are used. Said to be an outstanding feature of the equipment is its ability to operate in tropical as well as sub-zero climates.



Write 297 on Reader Service Card for more information



TRAILER TRUCKS



WAREHOUSE TRUCKS



JACKS and SKIDS



BALANCE TYPE STAKE TRUCKS



AUTO-LOAD BARREL TRUCKS



SHELF TRUCKS



DEMOUNTABLE RUBBER TIERED WHEELS



RUBBER TIERED CASTERS



NON-TILTING PLATFORM TRUCKS

## FOR BETTER HANDLING

Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative.

SINCE 1891

**Nutting**

**TRUCK & CASTER CO.**  
1408 Division St. Faribault, Minn.

Export Sales Representative Scheel International, Inc.  
4237 North Lincoln Avenue, Chicago 18, Ill.

Circle No. 105 on Reader Service Card for more information

FLOW • MARCH, 1954

## Industrial Scales

One piece sectors are featured in the new range of scales manufactured by Toledo Scale Company. It is stated that the new full floating, double pendulum mechanism increases precision and strength and eliminates hand adjustments necessary in older assembly of several components. Significant improvements in the portable model illustrated here include 18 percent larger platform, with reduced overall dimensions. Wheels are now located within base dimensions. The indicating heads of these scales can be installed to face in one of eight different directions; or a scale with a head to swivel through 360° can be obtained.

Write 298 on Reader Service Card for more information

## Floor Marking Material

A variety of designs is possible for floor marking with material from the Armor Flex Traffic



Circle No. 31 on Reader Service Card for more information

## the ANSWER to lifting and dumping bottlenecks

**ELIMINATE MANUAL LIFTING** and speed up materials handling with a CESCO skip-hoist Dumper. Reduce handling time and costs. Single and multi-purpose portable models in standard heights from 6 to 10 ft. Stationary models to 20 ft. Up to 1500 lb. per load, 100 loads per hour. Easy, safe push-button control eliminates accidents.

**LIFTS AND DUMPS DRUMS, BOXES, BULK, BAGS, MECHANICALLY**

**ESSEX CONVEYORS, INC.**  
165 Franklin Ave. • Nutley 10, N. J.  
**COLSON EQUIPMENT & SUPPLY CO.**  
1317 Willow Street • Los Angeles 13, Calif.



**CESCO SKIP-HOIST DUMPER**

**NO RAMMING OR JAMMING! NO SPINNING OF WHEELS WHEN LOADING BULKY OR "PACKED" MATERIALS**

**LESSMANN LoadALL**

**DIGS IN WHILE STANDING STILL!**

### A HIGHLY MANEUVERABLE POWER SHOVEL

Lessmann LoadALL scoops up big loads of the most heavily compacted soils, cinders, aggregate, etc. . . does it in 5 seconds while standing still! Extra hydraulic cylinders supply Hydraulic Power Crowd. This means loading with hydraulics which eliminates ramming and spinning of wheels . . . *minimizes repairs, reduces maintenance!* Dozer blade is easily attached for grading, back-filling. Crane-hook, lift forks, snow and trash buckets are also available.

### 9 FT. DUMPING CLEARANCE

LoadALL has clearance for the highest trucks, bins and mixing hoppers. It loads or unloads at any height from 12" below wheel level to 108" above. Wheelbase of 73" and 12' turning radius make it highly maneuverable.

### 52" REACH

Here's a full 4'4" reach at maximum clearance! LoadALL carries load close but quickly boosts it 'way out ahead for easier loading . . . another advantage of Hydraulic Power Crowd.

*Check these Features!*

- ✓ **STANDARDIZED PARTS.** Ford, Timken, Vickers, Bendix, etc., assure highest quality components and low-cost servicing.
- ✓ **SAFETY.** Operator has unrestricted visibility and is protected from loader arms.
- ✓ **EASY HANDLING.** Full reverse shifting gives LoadALL four speeds forward and four reverse. Three simple, conveniently located hydraulic controls assure efficiency.
- ✓ **LOW COST.** You save on first cost, operating costs and maintenance costs with a LoadALL.
- ✓ **LOADALL BUCKETS.** Available with capacities of 3/4, 1, 1 1/4 and 1 1/2 yards.



**LESSMANN MANUFACTURING COMPANY**

Affiliate of United Steel Barrel Co., Philadelphia - Wilmington, Del.

2003 Easton Blvd., Des Moines 4, Iowa

Write for Complete Information TODAY!

Circle No. 80 on Reader Service Card for more information



### The MARTIN DECKER S-6 CRANE WEIGHT INDICATOR

The new S-6 warns your crane operator of an excessive load before he actually lifts it. Stops overtaxing equipment. Prevents costly accidents caused by overburdening.

Merely by glancing at a dial a few inches from his controls your operator instantly knows the total weight he's lifting. He can tally the pounds when he's loading trucks. No more overload fines. Public-scale fees are cut to the bone.

Contact your nearest Martin-Decker representative. Ask him about the S-6, the new inexpensive weight indicator for cranes having capacities up to 50,000 pounds.

#### DISTRIBUTORS:

**KANSAS CITY, KAN.** LATHAM, N. Y.  
A. B. Kent & Co.  
541 Main Ave.—Box 126

**DETROIT** C. E. Rauter Corp.  
George Meeks  
Metal Products Co.  
6432 Cass Ave.

**PHILADELPHIA** Brodie Industrial  
A-1 Industrial Equip-  
ment, Inc.  
1202-22 Frankford Ave.

**PITTSBURGH** Bell International Co.  
Brinker Supply Company  
6545 Hamilton Ave.

**BUFFALO** Brodie Industrial Trucks  
1450 Michigan Ave.

NAME OF  
THE WEIGHT  
INDICATOR

- ☐ Please send literature on Martin-Decker Crane Weight Indicator.  
☐ Have local representative call for an appointment.

DEPT. F-34

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**MARTIN DECKER CORP.**  
LONG BEACH, CALIFORNIA

Products Company. Bright yellow in color, this non-absorbent, plastic material measures 3 x 6 x .02 in. Material is installed with special oil-resistant adhesive, and manufacturer claims it will last longer than ordinary painted line. Trade name is Armor Flex Traffic Marker.

Write 299 on Reader Service Card for more information

### Roller Bearings

Rollway Bearing Company has just introduced a new application of single acting thrust roller bearings for use on railway transfer bridges and other high-capacity industrial loadings. The Type T-21906 bearing supports a vertical thrust load of 380,000 lbs. at 16 rpm, and has rated capacity of 700,000 lbs. Instead of using a center shaft to locate the bearing's roller assembly, a locating ring, securely pinned to stationary plate, maintains assembly in alignment. Bearing is said to be especially suitable for



### FOR Streamlined MATERIAL HANDLING



### STACKING BOXES and NESTING PANS

Ideal for handling and storing medium loads. Particularly rigid when stacked because inside supporting rails extend around all four sides. Of heavy-gauge steel, three piece construction with reinforced corners, these boxes are made to stand up under heavy strain.

STANDARD AND SPECIAL SIZES

Representatives from Coast to Coast



WRITE TODAY for Information

1724 S. NORMAL AVE. • CHICAGO, 16, ILL.

Circle No. 86 on Reader Service Card for more information

168

Circle No. 163 on Reader Service Card for more information

FLOW • MARCH, 1954



limited space installations, and also can be used on horizontal shaft applications. Specifications are: 25 3/4 in. outside diameter; 17 in. inside diameter; 3 3/4 in. thick.

Write 300 on Reader Service Card for more information

#### Power Belt Conveyor

A power driven, reversible belt conveyor is being featured as a new line by Arrow Products, Inc. The Arro-Veyor is made up of separate drive and tail units, with intermediate sections of conveyor in between. Designed for horizontal use

only, handling applications include boxes, bags, cartons, cases, order selecting or warehousing operations. Motors range from 3/4 to 2 h.p., and bed widths from 15 to 34 inches are standard.

Write 301 on Reader Service Card for more information

#### Unit-Cooled D-C Motor

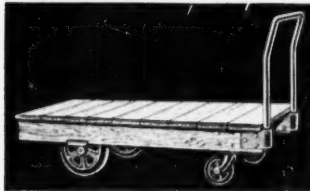
General Electric Company has announced a totally enclosed, unit-cooled, direct current motor, for use in severe atmospheric conditions. Said

## It isn't Easy-



## ... Selecting the Right PLATFORM Truck!

To help you choose the right platform truck for every job—you'll want to have within easy reach, all the facts available in the big, clearly illustrated Hamilton Truck Catalog. It contains basic information on all Hamilton floor trucks... in hundreds of different types and sizes—in rated capacities to 12,000 lbs.



Write today for your copy of the Hamilton Truck Catalog, and the name of your nearest Hamilton representative.

**THE HAMILTON CASTER AND MFG. CO.**  
1672 DIXIE HIGHWAY • HAMILTON, OHIO

Circle No. 61 on Reader Service Card for more information  
**FLOW • MARCH, 1954**

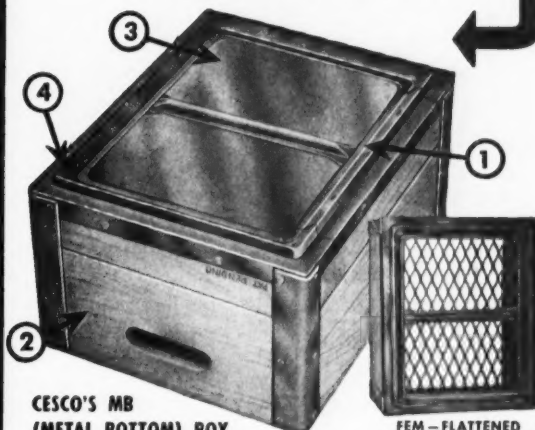
## Cesco's TOTE-SHOP BOXES

... Do Your Job • EFFICIENTLY • EASILY • ECONOMICALLY

ON CONVEYORS, PALLETS, HAND TRUCKS,  
SKID PLATFORMS, OR WHAT HAVE YOU



1. Heavy Duty Strut . . . Prevents Sag . . . Permits Bottom Flex . . . Distributes shock.
2. High Grade Hard Wood Lumber .
3. (FM) Flat Metal Bottom . . . likewise available in open type bottoms FEM-FPM-WM illustrated below.
4. Specially designed "Bottom Stacking Runner" . . . One piece . . . Rounded Corners (No Mitered Joints — No Distortion).



#### CESCO'S MB (METAL BOTTOM) BOX

(Prices net - per box)	MB-20	MB-24
Lots of 2000.....	\$2.65	\$3.00
1000 — 1999.....	2.68	3.03
500 — 999.....	2.71	3.06
250 — 499.....	2.76	3.11
100 — 249.....	2.81	3.16

#### 2 STANDARD SIZES

MB-20: 14 1/2" x 11 3/4" x 9 3/4"  
MB-24: 17 1/2" x 11 3/4" x 9 3/4"

F. O. B. Northampton, Mass.

#### CESCO'S WB (WOOD BOTTOM) BOX

Depending upon the material packed and the handling method stock sizes will accommodate loads up to 200 lbs.; possibly greater.

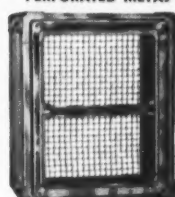
- Ruggedly constructed... steel reinforcing features of zinc coated prime stock... Self Stacking... convenient hand holes
- Binding rivets PLUS corner lock style yields maximum rigidity

Write today for quotations on special sizes  
... Please submit specifications.

FEM — FLATTENED  
EXPANDED METAL



FPM — FLAT  
PERFORATED METAL



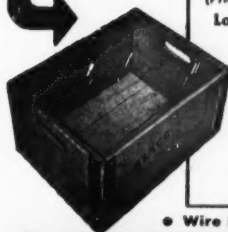
WM — WIRE MESH

#### CESCO'S WB (WOOD BOTTOM) BOX

(Prices Net - per box)	WB-1	WB-2	WB-3
Lots of 2000	\$1.96	\$2.14	\$2.28
1000-1999	1.99	2.17	2.31
500-999	2.02	2.20	2.34
250-499	2.07	2.25	2.39
100-249	2.12	2.30	2.44

No. 1 size — (I.D.) — 14 1/2" x 11 3/4" x 9"  
No. 2 size — (I.D.) — 18" x 11 3/4" x 9"  
No. 3 size — (I.D.) — 20" x 11 3/4" x 9"

F. O. B. Northampton, Mass.



● Wire Baskets ● Special Pallets ● Tote Trays

**CESCO CONTAINER CO.**

475 Fifth Avenue  
New York 17, N. Y.  
Factory: Northampton, Mass.

Circle No. 25 on Reader Service Card for more information

Circle No. 115 on Reader Service Card for more information

## Roll a NEW Floor OVER the old with



**Redi-Roll**  
Factory Prepared, Heavy  
Duty Plastic Resurfacer  
**NO WAITING!**  
Let Heaviest Traffic  
Roll Over It  
Immediately!

Abolish downtime due to floor failures. Just roll **Redi-Roll** over the old floor to a compacted 1/4" thickness and USE AT ONCE. It's spark-proof! It's tough! It's industry's best floor buy. Write for details now . . . today!

**BUCK-TRED**

Corporation

Manufacturers of a Complete Line of Building Maintenance Materials  
7440-7450 North St. Louis Avenue • Skokie, Illinois  
In Canada: Buck-Tred Corporation (Canada) Limited, Toronto 5



### Trojan

**TRACTOR  
for  
POWER TRAVEL**

**THIS**

**NOT THIS**

Attached by a simple draw-bar, the Trojan Tractor quickly converts existing, slow, hand-pushed hoists and light overhead cranes into fast, power-traveled units. Save time, effort; reduce material handling costs.

• Ask for Trojan Tractor Bulletin 810 today.

**DETROIT HOIST & MACHINE CO.**  
8263 Morrow St., Detroit 11, Mich.

Designers and Manufacturers of Hoists and Cranes  
*Since 1905*

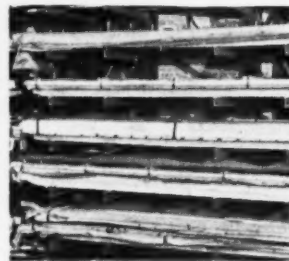
Circle No. 41 on Reader Service Card for more information  
170

to be the smallest standard model of its type, the motor is available in 15 to 200 hp, features 50 percent greater heat transfer in 37 percent smaller unit. Compact cooling units, mounted within motors, permit operation at extremely low speeds for long periods, as ventilation is independent of motor speed, G.E. engineers say. Double system of blowers is said to assure rapid cooling.

Write 302 on Reader Service Card for more information

### Storage Rack

Flexa Steel Products Inc., manufacturers of all-bolted steel framing, has designed a special warehouse storage and order picking rack for aluminum sheets. The unit is constructed of standard Flexa steel channels and fittings, and handles aluminum sheets measuring 48 x 144 in. Load weight per shelf is 4000 lbs. Overall load height is 14 1/2 ft. Spacings are fully adjustable, and no welding, drilling or special tools are required, due to the all-bolted construction.



Write 303 on Reader Service Card for more information

## NO WASTE EFFORT

...when you move loads over



### ROWE ADJUST-A-DOCKS

There's never a hitch in straight-line travel between plant and truck or rail car. With Rowe Adjust-A-Docks those time-consuming, expensive rehandlings during loading or unloading are eliminated.

Write today for a free, profusely illustrated and informative booklet detailing Rowe equipment for more effective dock handling.



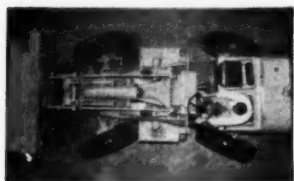
**ROWE METHODS INC.**

2534-C DETROIT AVENUE

CLEVELAND 13, OHIO

Circle No. 118 on Reader Service Card for more information  
FLOW • MARCH, 1954

#### Four-wheel Drive Loader



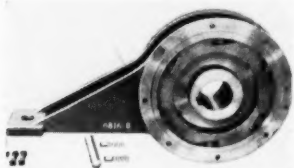
Four-wheel steering has been incorporated into the drive of the new Baker-Lull Corp. Shovel loader. Inside turning radius for the 19 ft. long unit is 7 ft. 6 in. Power steering on all four wheels is optional.

Operator seats are located in the rear of the truck, above the engine and away from all moving parts. This vantage point was designed for operator visibility and safety, according to the manufacturer.

Write 304 on Reader Service Card for more information

#### Roller Type Hold-Back

The Standard Products Division of Stephens-Adamson Mfg. Co. has designed the model S-A Enclosed Roller Type Hold-Back to prevent reversal of bucket elevators and inclined conveyors, due to power failure under load. The unit consists of an inner member with wedge pockets for six hardened roll-





**THE "Handy" CASE TRUCK**

for WAREHOUSES  
DELIVERY TRUCKS—  
OFFICES—STORES—  
INSTITUTIONS—  
GENERAL USE

Here's a light, strong, easy-to-use truck for beverage handlers, shop receiving rooms, retail stores, etc. Ideal for use on delivery trucks. Large, quiet, 10" semi-pneumatic wheels absorb jars, roll easily over curbs, and climb stairs. Perfectly balanced for easy handling of cases, boxes, cartons, kegs, cylinders and all moderate-weight loads. Model No. 51, shown above, has Hyatt roller bearing wheels equipped with grease fittings.

**THOMAS TRUCK & CASTER CO.**

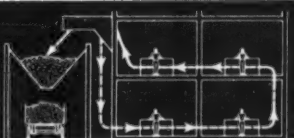
422 Mississippi River  
KEOKUK, IOWA

Circle No. 133 on Reader Service Card for more information  
FLOW • MARCH, 1954



Send  
for Free Catalog  
to see complete  
line of  
Case Trucks.

upstairs...  
downstairs...



**ALL AROUND  
YOUR PLANT—**  
*Hapman*  
**TUBULAR CONVEYORS**  
can carry flowable materials  
at tremendous  
savings!



**IF YOU HANDLE**  
flowable materials similar to any of these  
**PRODUCTS:**

Bulk Chemicals: (Wet dry, abrasive, corrosive, radioactive)

Food: Starch, flour, malt, grain, coffee or  
**BY-PRODUCTS:**

Metal Chips from machine tools...

Sludge from quench tanks or grinding wheels...

Coal or clay, etc.

**YOU MAY REAP ENORMOUS SAVINGS —**  
some of America's most cost-conscious firms are doing it — with plant-wide systems of Hapman Tubular Conveyors. The list of materials you can handle is almost endless. You gain great advantages, both mechanically and in terms of labor saved. The stakes are high — why not investigate now? Write today for Bulletin F-354.



Circle No. 62 on Reader Service Card for more information



Circle No. 169 on Reader Service Card for more information



**How to solve  
your storage  
problems**

# IT'S FREE!

new

## EQUIPTO BOOKLET

Helps lick toughest  
storage problems!

Here's "must" reading for anyone who plans, buys, or uses storage equipment. Shows how you can have custom-arranged facilities, yet pay only the price of standardized units. Learn how to survey, make floor plans and elevations of your own particular requirements. Change arrangement of components anytime. Buy only what you need; expand as you go. Mail coupon today for your free copy.

**EQUIPTO** — 805 Prairie Avenue, Aurora, Illinois  
Please send me copy of new Equipto Booklet entitled "How to Solve Your Storage Problems". I understand that there is no charge or obligation of any kind.

NAME \_\_\_\_\_  
FIRM NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

**Equipto**

Division of  
Aurora Equipment Company  
805 Prairie Avenue, Aurora, Illinois

### MERRILL MATERIALS HANDLING DEVICES



**LIFTING CLAMP**



**TWIN LIFTER**



**HAND GRIP**



**DRUM TILTER**



**DRAG CLAMP**



**DRUM OPENER**

**MERRILL BROTHERS**

56-74 ARNOLD AVENUE MASPETH, N. Y.

Circle No. 91 on Reader Service Card for more information  
172

ers which rotates with the shaft. When the shaft attempts to reverse, rollers wedge against the outer cylinder. Pressure springs and plungers guarantee instant engagement of rollers. Hold-back releases when forward motion of shaft is resumed.

Write 305 on Reader Service Card for more information

### Pallet Racks for High Selectivity

Racks claimed to have been designed to withstand abuse by fork trucks are being marketed by Lewis-Shepard. Termed their Type "D", the racks are of hot roll structural steel and specifically designed for low ceilings and high selectivity. All joints are slip-in type, with no bolts, and may be easily expanded in length or height. Two horizontal front-to-back members connecting the rails for each pallet, assure support, even when pallets are placed off-center. The truck pictured is an electric walkie JackStacker, also manufactured by Lewis-Shepard.



Write 306 on Reader Service Card for more information

### GET THE MOST FOR YOUR MAINTENANCE DOLLAR!

With this  $\frac{3}{4}$  ton capacity unit, you can haul bulk loads like scrap or concrete—haul heavy repair or maintenance items on the flat bed—plow snow or do light grading with the blade accessory—keep down weeds or control insects with 50 gal. sprayer attachment.



Interchangeable bucket and flat bed latch onto Prime-Mover chassis . . . blade and sprayer attached in jiffy. Works indoors—outdoors, through narrow doors, on rough ground, in all kinds of weather. Take the load off your maintenance men with a Prime-Mover. Write for On-the-Job data. Prime-Mover Co., Muscatine, Iowa.

Circle No. 154 on Reader Service Card for more information  
FLOW • MARCH, 1954



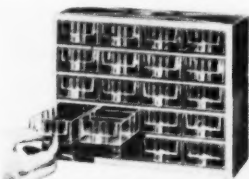
### Magnesium Yard Ramp

Penco Engineering Company has added a yard ramp to its line of handling equipment. It is constructed of magnesium with raised diamond surface plate, and the manufacturer says every degree of safety has been incorporated into its design. Sixty and 70 inch widths are available, in capacities from 4,000 to 16,000 lbs. It is made with fixed wheels or hydraulic lift, with adjustments from 38 to 55 inches. Curved side rails are featured the entire length of ramp, on both sides. Standard length is 30 feet. Write 307 on Reader Service Card for more information



### Plastic Drawer Cabinets

Production of a complete line of "See-Thru" drawer cabinets for small-parts filing and storage is announced by General Industrial Company. The popular Model J-20 has specifications as follows: 5 $\frac{7}{8}$  in. long x 2 $\frac{3}{4}$  in. wide x 1-7/16 in. high; overall size 10 $\frac{1}{4}$  in. high x 12 $\frac{1}{2}$  in. wide x 6 in. deep; welded



Gets maximum efficiency from your conveyor system. Ideal for switching production lines to various machines for isle system warehousing, assembling orders and all gathering and distributing uses.

Standard Widths:  
11 $\frac{1}{2}$ ", 15", 18"  
Through & 45° R & L.  
Spur Switch: 45° R. or L. & Through.

May be furnished with electric or pneumatic Remote Control.

● WRITE FOR PRICES ●

### METZGAR CONVEYOR CO.

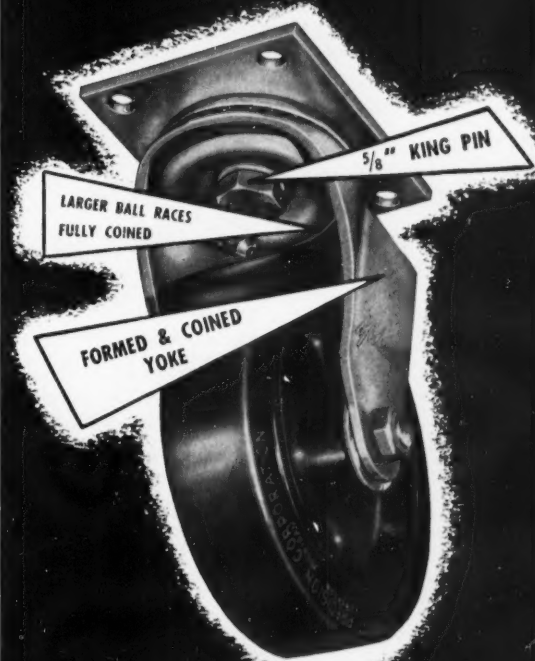
423 Douglas St., N.W.

MFRS. OF WHEEL & ROLLER GRAVITY  
& LIVE ROLLER CONVEYORS • POWER  
BELT CONVEYORS • SWITCHES • AC-  
CESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

Circle No. 92 on Reader Service Card for more information  
FLOW • MARCH, 1954

# It's New!



## The Midwest PressCoin Caster

Here is the caster that industry has been waiting for. It's inexpensive, rolls and swivels easily and is the strongest caster of its type you can buy, for medium-light duty.

Designed to hold ball bearings firmly in place when subjected to shock over rough floors, etc. Midwest PressCoin Casters are designed with top plate and Raceways in separate detail. It's built better, works better, lasts longer.

### To Get the Best-Buy Midwest

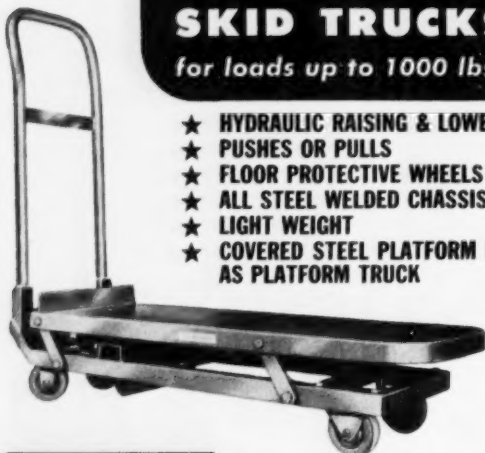
Write Today for Complete Information

**Midwest** PRECISION CORPORATION

301 Hillsdale • Jackson, Michigan

Circle No. 165 on Reader Service Card for more information

**LOW COST, RUGGED**  
**Hydraulic**  
**SKID TRUCKS**  
for loads up to 1000 lbs!



- ★ HYDRAULIC RAISING & LOWERING
- ★ PUSHES OR PULLS
- ★ FLOOR PROTECTIVE WHEELS
- ★ ALL STEEL WELDED CHASSIS
- ★ LIGHT WEIGHT
- ★ COVERED STEEL PLATFORM USED AS PLATFORM TRUCK



● Fully illustrated bulletin HST-19 describes this versatile truck in detail. Write for it today. Catalog GP-17 describing many standard Ironbound cost-saving units will be sent you without obligation, too.

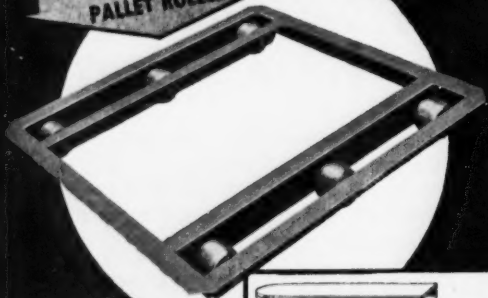
**IRONBOUND BOX & LUMBER COMPANY**  
30 Hoffman Place, Hillside, New Jersey



**IRONBOUND**

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, SKID TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

**ACE**  
**STEVEDORE**  
**KING**  
**PALLET ROLLER**



**PALLET ROLLERS**

Pallet Rollers reduce handling costs in loaded pallet operation, in shipping, receiving, warehousing, loading and unloading of Highway Equipment, and freeing of Fork Trucks elsewhere needed. No more bottlenecks. Ask for Eng. Bulletin 102K.



**FRANK L. ROBINSON COMPANY**  
Industrial Engineers • Manufacturers • Distributors  
LATHAM SQUARE BLDG. OAKLAND 12, CALIF.

DISTRIBUTORSHIPS AVAILABLE

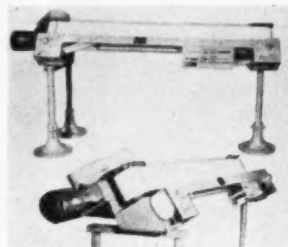
Circle No. 114 on Reader Service Card for more information  
174

all-steel cabinet; 20 lifetime guaranteed plastic spillproof drawers; adjustable drawer dividers and identification labels. Other units range from 8 to 128 drawers. Over 750 combinations can be supplied.

Write 308 on Reader Service Card for more information

**"V" Type Conveyor**

A 14 gauge "V" belt slide bed conveyor has been added to the line of equipment manufactured by Island Equipment Corp. Available in widths of 5 or 8 in. with 1 to 6 in. belts, the conveyor is driven by a fixed speed motor and mitre gears. The unit may be placed on the floor, suspended from the ceiling, or mounted above an existing conveyor. Five or 10 foot bed lengths, in 5 foot increments, are available.



Write 309 on Reader Service Card for more information

**V-Belt**

A horsepower capacity average of 40 percent over standard V-belts is claimed by Raybestos-



**ASHWORTH**

**Process Belts**

... engineered for the Specific End Use are designed to Keep Your Product on the Move, provide long life and low maintenance. Fabricated from carbon steel, aluminum coated steel, low chrome-silicon alloys and nickel-chrome analyses as determined by the end use.



WRITE FOR  
ILLUSTRATED  
CATALOG 52F

**ASHWORTH BROS., INC.**  
METAL PRODUCTS DIV. • WORCESTER, MASS.

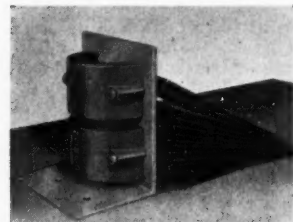
**Sales Engineers:** Buffalo • Chattanooga • Chicago • Cleveland • Detroit • Kansas City  
Los Angeles • New York • Philadelphia • Pittsburgh • Rochester  
Seattle • St. Paul • — Canadian Rep., PECKOVER'S LTD. • Toronto • Montreal

Circle No. 9 on Reader Service Card for more information  
FLOW • MARCH, 1954

Manhattan, Inc., Manhattan Rubber Division, for its "super-power" V-belt. It is said that on new drives, narrower sheaves may be used, thus saving space, as fewer belts are required for the same power demands. This R/M Super-Power V-Belt has incorporated into its design a super-strength synthetic fiber for greater power, is of all synthetic rubber, oil-proof, non-spark and heat-resistant.

Write 310 on Reader Service Card for more information

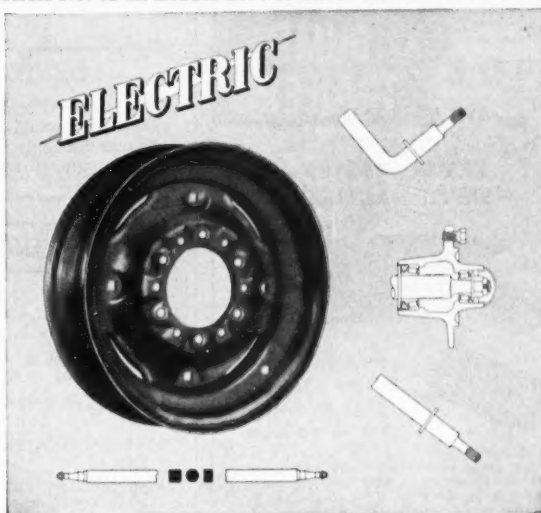
#### Automatic Sheet Floater



Irregular or odd shaped stacks of sheet steel are claimed to be easily handled through use of the Homer Magnetic Sheet Floater. The machine automatically floats sheets, thus preventing double feeding during pressing, punching and stamping operations. Floaters are available in three sizes to handle sheets from 14 mil stock to 1/4 in. plate. Multiple units can be used where dimension of sheets exceed recommended size for individual units. Unit is made by The Homer Manufacturing Company.

Write 311 on Reader Service Card for more information

Circle No. 45 on Reader Service Card for more information



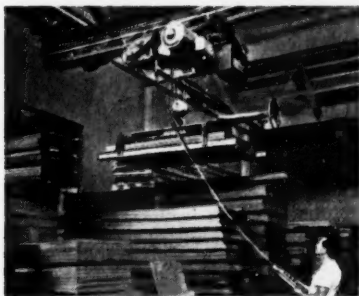
### A Wheel for Every Job!

Our engineers will recommend the most efficient and economical wheel and axle assembly for your unit. We invite your inquiries.

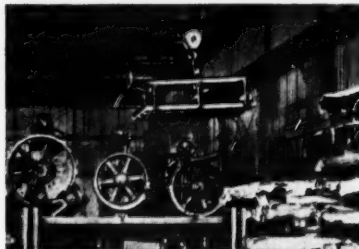
WRITE US FOR CATALOG  
**ELECTRIC WHEEL CO.**  
2804 SPRUCE, QUINCY, ILLINOIS

## MANSAYER GRABS

### Sheet Grabs for All Conditions



Showing how high and neatly sheets can be stacked with a Mansaver

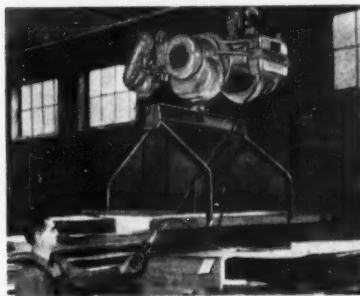


How a Mansaver takes sheets direct from storage to the presses

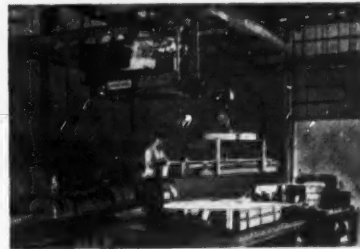
**OUR  
ENGINEERS  
ARE AT  
YOUR  
SERVICE**

If you can't use a sheet grab, perhaps you can use one of our 500 other styles

**COMPLETE  
CATALOG  
ON  
REQUEST**



Operating with trolley hoist all under one-man control



Fully loaded truck and trailer unloaded in 20 minutes with motor-driven grab!



★ **MANSAYER INDUSTRIES, INC. • 3103 EAST ST., NEW HAVEN, CONN.** ★

Circle No. 85 on Reader Service Card for more information



## RED-E No-Tip DUMP TRAILERS

**EASIER, FASTER,  
SAFER HAULING!**



**No Tip-Overs—  
Weight is Balanced  
at Axles—  
Not Above Them!**

For both in-plant and yard work, move dirt, sand, trash, shavings, scrap, etc., the SAFE way... with Red-E Trailers. Specially designed for super-stability, simplest operation over any terrain. 1½ ton capacity, with 104" overall length, 41"-50" width hub-to-hub, 84" wheelbase. 4-wheel or 8-wheel models available, with pneumatic or zero-pressure tires. (Also with heavy-duty stake body.) Easy, safe 5th-wheel steering for sharpest turns; Fulton trailer hitches for 3-5 unit trains. Rugged, practical, safe—Red-E No-Tip Trailers are engineered for all-around work. Adjusts to 14, 18, 24 or 32-inch height for easy loading!

**WRITE FOR FREE LITERATURE  
RED-E TRACTOR CO.  
RICHFIELD, WIS.**

## Classified Advertising Section

### USED EQUIPMENT — MEN — JOBS — LINES

Rates: for "Positions Wanted" \$8.00 minimum, limit 25 words. For all other classifications \$10.00 minimum for 25 words; each additional word 25c. Boldface type or all caps, \$12.00 minimum for 25 words, each additional word 35c. Box address counts as five words. All insertions payable in advance.

#### FOR SALE

##### SUBSTANTIAL DISCOUNTS

Practically New 1953

##### FORK LIFT TRUCKS

2,000#, 5,000#, 6,000# Y & T, gas, solid tires, 8' 6" and 10' lifts.

6,000# Clark gas, pneumatic tires, 10' lift.

4,000# Baker, electric, solid tires, 10' lift.

Also 5,000# Automatic Skylift with grab, 2 batteries and charger.

2,000# Y & T Stackers, electric, solid tires, 8' 6" lift, with batteries.

##### NATIONAL EQUIPMENT RENTALS, LTD.

24-16 Jackson Ave., Long Island City, N. Y. "Originators of The Self-Liquidating Rental Plan."

CLARK UTILITRUC 168" lift; late 1950. \$1950.00. Complete listings available. Bond Industrial, 51 Clarkson St., New York 14, N. Y. Phone Watkins 4-0450, Mr. McGuff.

#### HELP WANTED

**OHIO AREA—GOOD OPPORTUNITY** for Sales Engineer to handle specialized and proven line of bulk handling conveyors. Reply with full details to FLOW, Box 3154.

**PARTNER WANTED**, leading Metropolitan N. Y. C. materials handling distributor. Terrific opportunity for top notch engineer or sales manager. Please include resume with reply. Write c/o FLOW, Box 3254.

#### JOB HUNTING?

Here's a new FLOW service to aid those who hesitate to answer "blind" advertisements in our Help Wanted column. Rather than jeopardize your present job by having your letter fall into the hands of your own employer or some other unwanted firm, just send FLOW a list of the "taboo" firms along with your letter. If the advertiser is on your list your letter will be returned to you.

*It Costs a Lot Less to Handle*  
**CASES, CARTONS, BOXES, CANS**  
WITH THE **ULTIMATE**  
DOUBLE-FLEX  
**CHAIN CONVEYOR**



Here's the conveyor with the broad, flat carrying surface, that's easy to install with all curves live!

For beer, beverage, whiskey, food cartons and cases, milk cases and cans, ice cream cans and packages... the **ULTIMATE DOUBLE-FLEX** does a real job. You can convey up and down inclines, around curves, through holes in walls, inside or outside of buildings, around short radius, horizontal curves in a smooth uniform movement. Get the facts today!

**FLEXIBLE  
ECONOMICAL  
PRACTICAL**

**FREE!** MAIL THIS COUPON FOR FURTHER DETAILS

ISLAND EQUIPMENT CORP.  
27-01 Bridge Plaza North  
Long Island City 1, N. Y.

Sounds good. Send me all the facts on how the **ULTIMATE DOUBLE-FLEX CHAIN CONVEYOR** will save us money.

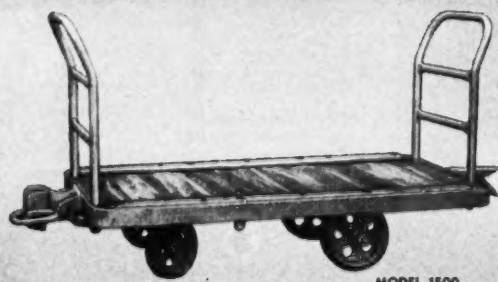
COMPANY.....  
NAME.....  
ADDRESS.....  
CITY..... STATE.....

Visit us at Booths 116 and 118 at the Packaging Show

Circle No. 75 on Reader Service Card for more information  
176

# JAKES

America's Finest  
Industrial Trucks and Trailers



MODEL 1500

Literature available  
Capacities from 2,000 to 10,000 pounds

## JAKES FOUNDRY COMPANY

Established 1891

2800 Charlotte Avenue      Nashville 9, Tennessee

Circle No. 76 on Reader Service Card for more information  
FLOW • MARCH, 1954



# Advertisers' Index

<b>A</b>	
ABC Packaging Machine Corp.	130
Abell-Howe Co.	24
Advance Metal Products Corp.	168
Allied Steel & Conveyors, Inc.	154
Allis-Chalmers Mfg. Co.	32
Alvey Conveyor Mfg. Co.	89
Alvey Ferguson Co.	148
American Baler Co.	138
American Chain & Cable Co., Wright Hoist Div.	22 & 23
American MonoRail Co.	21
American Photocopy Equipment Co.	96
American Pulley Co.	56
American Sisalkraft Co.	132
Angier Corp.	113
Appleton Electric Co.	15
Arkansas Pallet Co.	160
Ashworth Bros. Inc.	174
Aurora Equipment Co.	172
Austin-Western Co.	53
Autoette, Inc.	178

<b>B</b>	
Baker-Raulang Co.	9
Baldwin-Lima-Hamilton Corp.	55
Barrett-Cravens Co.	19
Behr-Manning Corp.	120
S. B. Beugler Co.	163
Big Joe Mfg. Co.	2
Bigelow-Garvey Lumber Co.	122
Black Products Co.	124
Blackmer Pump Co.	162
Bowser, Inc.	178
Brainard Steel Div., Sharon Steel Corp.	111
Brooks Equipment & Mfg. Co.	58
Brooks & Perkins, Inc.	95
Brummeler Steel Products Corp.	157
Bucyrus-Erie Co.	92
Buda Co.	17
E. W. Buschman Co.	26

<b>C</b>	
C & D Batteries Inc.	50
Cambridge Wire Cloth Co.	34
Cesco Container Co.	169
Champion Co.	152
Wm. Christensen Co. Inc.	152
Chrysler Corp.	60
Clark Equipment Co.	12 & 13, 37
Coles Cranes, Inc.	94
Colson Corp.	43
Colson Equipment & Supply Co.	167
Conco Engineering Works	163
Conveyor Specialty Co. Inc.	8
Convoy, Inc.	164
Counsel Machine Co. Inc.	134
Cullen-Friedstedt Co.	88
Cushman & Denison Mfg. Co.	129
Cushman Motor Works, Inc.	153

<b>D</b>	
Darnell Corp. Ltd.	152
Dempster Bros. Inc.	46
Derby Sealers, Inc.	126
Detroit Hoist & Machine Co.	170
Dixon Automatic Tools, Inc.	166
Chas. Wm. Doepke Mfg. Co.	36

<b>E</b>	
Easiquip Co.	150
Thos. A. Edison, Inc.	28
Electric Wheel Co.	175

Elizabeth Iron Works Inc.	140
Elwell-Parker Electric Co.	5
Evans Products Co.	100

<b>F</b>	
A. B. Farquhar Co.	145
Faultless Caster Corp.	Inside Front Cover
Federal Telephone & Radio Corp.	132
Feedrail Corp.	54
Field Engineering Co. Inc.	161
Dave Fischbein Co.	128
FLOW DIRECTORY	164
Flowstrut Corp.	159

<b>G</b>	
Gemar Associates	161
General Box Co.	123
A. J. Gerrard & Co.	128
Gerrard Steel Strapping Co.	116
B. F. Goodrich Co.	47
Goodyear Tire & Rubber Co.	1
Adolph Gottscho, Inc.	128
Gould National Batteries, Inc.	27

<b>H</b>	
Hamilton Caster & Mfg. Co.	169
Hapman Conveyors Inc.	171
Harnischfeger Corp.	29
Hemco Mfg. Inc.	158
Heppenstall Co.	31
Hinde & Dauch Paper Co.	127
Hopkinsville Pallet Co. Inc.	156
Frank G. Hough Co.	41
Hyster Co.	20

<b>I</b>	
Ideal Stencil Machine Co.	124
Industrial Crane & Hoist Corp.	161
International Paper Co.	118
International Staple & Machine Co.	109
Ironbound Box & Lumber Co.	174
Island Equipment Corp.	176

<b>J</b>	
Jakes Foundry Co.	176
Jaxon Wire Products Co.	153

<b>K</b>	
Kraissl Co.	126

<b>L</b>	
Lamson Corp.	52
Laughlin Mfg. Co. Inc.	158
Lessman Mfg. Co.	167
G. B. Lewis Co.	151
Lewis-Shepard Products, Inc.	91

<b>M</b>	
Magline, Inc.	Inside Back Cover
Magnesium Co. of America	30
Walter Maguire Co.	165
Manning, Maxwell & Moore, Inc.	147
Mansaver Industries, Inc.	175
Market Forge Co.	160
Marsh Stencil Machine Co.	128
Martin-Dacker Corp.	168
Mathews Conveyor Co.	143
Mechanical Handling Expo.	93
Mechanical Handling Systems, Inc.	38
Mercury Mfg. Co.	141
Merrill Bros.	172
Metzgar Conveyor Co.	173
Micron, Inc.	153
Midwest Precision Corp.	173
Mid-States Gummed Paper Co.	131
Milwaukee Truck and Caster Corp.	162
Minneapolis-Moline Co.	51

Minnesota Mining & Mfg. Co.	99
Monarch Rubber Co.	11
Motorola, Inc.	33
Moto-Truc Co.	57
Multistamp Co. Inc.	131

<b>N</b>	
New London Engineering Co.	155
Nichols Paper Prods. Co.	129
Nolan Co.	164
Nutting Truck & Caster Co.	166

<b>O</b>	
Oliver Corp.	39

<b>P</b>	
Powell Pressed Steel Co.	4
Prime Mover Co.	172
Price Waterhouse Co.	156

<b>R</b>	
Rack Engineering Co.	146
Rapids-Standard Co.	7
Raymond Corp.	34, 35
Ready Power Co.	90
Red-E-Tractor Co.	176
Republic Steel Corp.	25
Revolator Co.	164
Richards-Wilcox Mfg. Co.	133
Frank L. Robinson Co.	174
Rock-Tred Corp.	170
Rolock Inc.	158
Rotary Lift Co.	59
Rowe Methods, Inc.	170

<b>S</b>	
Sackner Prods.	129
Service Caster & Truck Corp.	155, 165
Shepard Niles Crane & Hoist Co.	16
Signode Steel Strapping Co.	114, 115
Silent Hoist & Crane Co.	88
Stanley Works, The	121, 137
Sterling Wheelbarrow Co.	156
Stokvis Edera & Co. Inc.	142
Swing-Shift Mfg. Co.	162

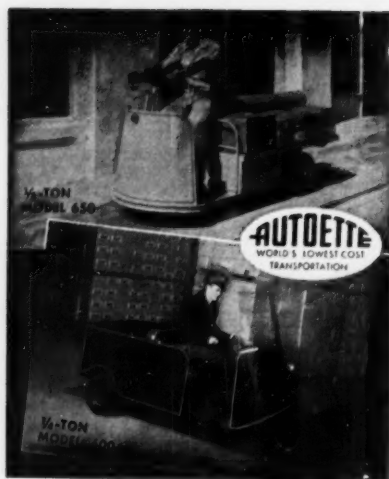
<b>T</b>	
G. H. Tennant Co.	6
Thilmany Pulp & Paper Co.	106
Thomas Truck & Caster Co.	171
Tote System, Inc.	18
Towmotor Corp.	87
Truck-Man Div. Knickerbocker Co.	149

<b>U</b>	
Union Metal Mfg. Co.	135
Union Steel Products Co.	139
Unistrut Products Co.	45
U. S. Spring & Bumper Co.	160

<b>V</b>	
Veeder-Root, Inc.	40

<b>W</b>	
Wayne Crane Division	144
Weber Addressing Machine Co.	125
West Bend Equipment Corp.	154
Wirebound Box Mfrs. Assn.	130
Woodford Hydrant Co.	163
Wright Hoist Div., American Chain & Cable Co.	22 & 23
Wright-Hibbard Industrial Electric Truck Co.	134

<b>Y</b>	
Yale & Towne Mfg. Co.	49



## 2 great new **ELECTRIC** **AUTOETTE Pickup Trucks**

Electric AUTOETTE Pickup Trucks are ideal for all types of light hauling in industrial plants... docks and warehouses... resort hotels... movie lots... golf courses... estates and ranches.

Both the 1/4-ton and 1/2-ton AUTOETTE Pickups are sturdily built to give years of dependable, trouble-free service. Because there's no engine or complicated parts, AUTOETTES are free from costly repairs and adjustments.

### Costs only 3¢ a day

AUTOETTE Pickup Trucks are famous for their amazing economy. Only 3 cents for electricity for 12 hours of daily hauling—30 miles of travel. Less than a dollar a month—\$10.00 a year—1/5 cent per ton-mile!

At the end of the day, just plug the Taper Charger into any electric outlet. The batteries are charged overnight—ready for another day of perfect service.

AUTOETTE Pickup Trucks sold by:

Autoette Sales & Service  
Los Angeles, Calif.  
Blood Enterprises, Inc.  
Long Beach, Calif.  
Western Autoette Sales  
Salt Lake City, Utah  
Rapid Sales Corporation  
Maywood, Ill.  
Guelich & Boebel, Inc.  
Buffalo, N. Y.  
B. F. Shearer Company  
Seattle, Wash.  
Brayley & Graham  
Portland, Oregon  
Wm. J. Trombley  
Dallas, Texas

For complete information and colorful AUTOETTE brochure, sign and return coupon below.

**AUTOETTE, Inc.** • Dept. 1312  
730 West Esther Street  
Long Beach, Calif.

Please send complete information about  
AUTOETTE Pickup Trucks

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_



Circle No. 152 on Reader Service Card  
178

## Radio Cuts Handling Time

**L**ARGE amount of travel time by six material handling vehicles is eliminated by a two-way radio system at the U. S. Army Arsenal at Augusta, Ga.

Vehicle operators receive assignments, regardless of their location in the arsenal, without having to return to the motor pool.

Prior to installation of the radio system, each vehicle was assigned every morning to a particular shop or area. When the operator anticipated long-term idleness, he traveled back to the motor pool for re-assignment.

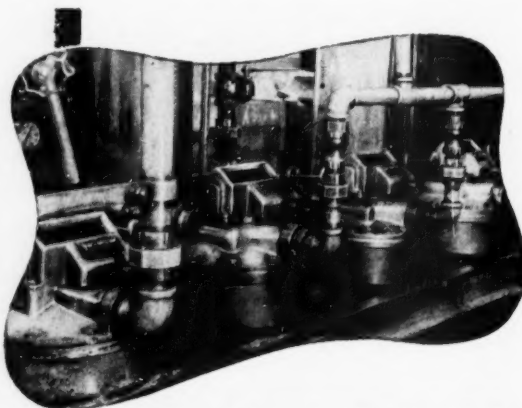
Each vehicle is now equipped with a radio telephone, and a radio dispatcher controls the routing of the vehicles through a base radio station. Finished with a job, the operator calls the dispatcher for further instructions.

It is estimated the system, which cost less than \$3,500, will save American taxpayers \$20,000 during the first year of operation.

Write No. 316 on Reader Service Card for more information



you  
can't beat  
the  
accuracy  
and  
dependability  
of



**BOWSER**  
**XACTO**  
**METERS**

XACTO is the meter that's changing liquid-handling habits in every industry where liquid measure and control have been a problem.

XACTO safely handles over 600 different liquids in processing, blending, packaging and many other batching or continuous operations.

Write TODAY for the facts on XACTO!

**BOWSER, INC.**

1380 Creighton Ave., Fort Wayne 2, Indiana

### REGIONAL OFFICES

Atlanta • Cleveland • Dallas • Fort Wayne • Kansas City • New York • San Francisco • Washington, D. C.  
Canadian Plant and Sales, Hamilton, Ontario, Canada



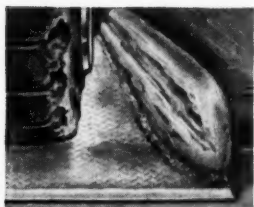
Circle No. 173 on Reader Service Card for more information

FLOW • MARCH, 1954

# **THIS** is the **BIG** difference in **Dock Boards!**

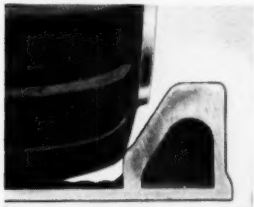
## **... A SAFETY CURB THAT PREVENTS DAMAGE TO POWER TRUCK TIRES!**

**THIS IS THE BIG DIFFERENCE THAT CAN HAND YOU  
BACK YOUR DOCK BOARD INVESTMENT THROUGH  
REDUCED TIRE WEAR ALONE . . . PLUS GIVING  
YOU LONGER SERVICE FROM YOUR DOCK BOARDS!**



### **HERE ARE THE FACTS!**

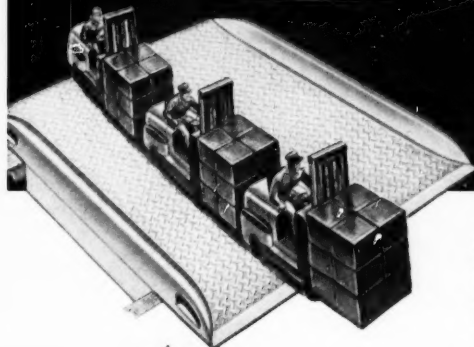
Normal curb design found in most of today's dock boards permits undesirable metal-to-metal contact between power truck wheel rims and the side curb. These repeated daily contacts create sharp, jagged edges in the side curb, which in turn cut and gouge tires. In addition, the side curbs are weakened and service life of the board is reduced.



The new Magliner \*Tire-Saver side curb is specifically designed to prevent these two costly conditions. Design of the curb is such that only the tire can make contact with the curb rail. Metal-to-metal contact is avoided—side curbs retain full design strength . . . and this common cause of tire damage is prevented!



**MAGNESIUM  
DOCK BOARDS**



are Engineered for **YOUR** Dock Conditions!

**Engineered for Span**—From measurements taken by experienced Magliner field representatives—at your docks!

**Engineered for Special Dock Conditions**—No two docks are the same. Here the experience of your Magliner representative is vitally important in determining the right board for you!

**Engineered for Equipment Underclearance**—Every Magliner dock board is engineered with the proper crown angle, to meet the underclearance requirements of your loading equipment (i.e., pallet trucks, fork trucks, etc.).

### **Your BEST Dock Board Value— is Magliner!**

**LIGHT**—Engineered from the world's lightest structural metal for safe lifting, fast positioning, easy storage! **STRONG**—Designed like a bridge to carry your heaviest loads . . . with capacity to spare! **SAFE**—Chamfered plate edges minimize load jar. Curb ends are radiused to permit wide turns—double strength to absorb impact loads! Positive lock insures against slipping.

Write for complete descriptive literature and the name of your nearest Magliner representative today!

### **MAGLINE, INC.**

P.O. BOX 346 • PINCONNING, MICHIGAN

In Canada: Magline of Canada, Limited, Renfrew, Ontario

Representatives  
in all  
principal cities.

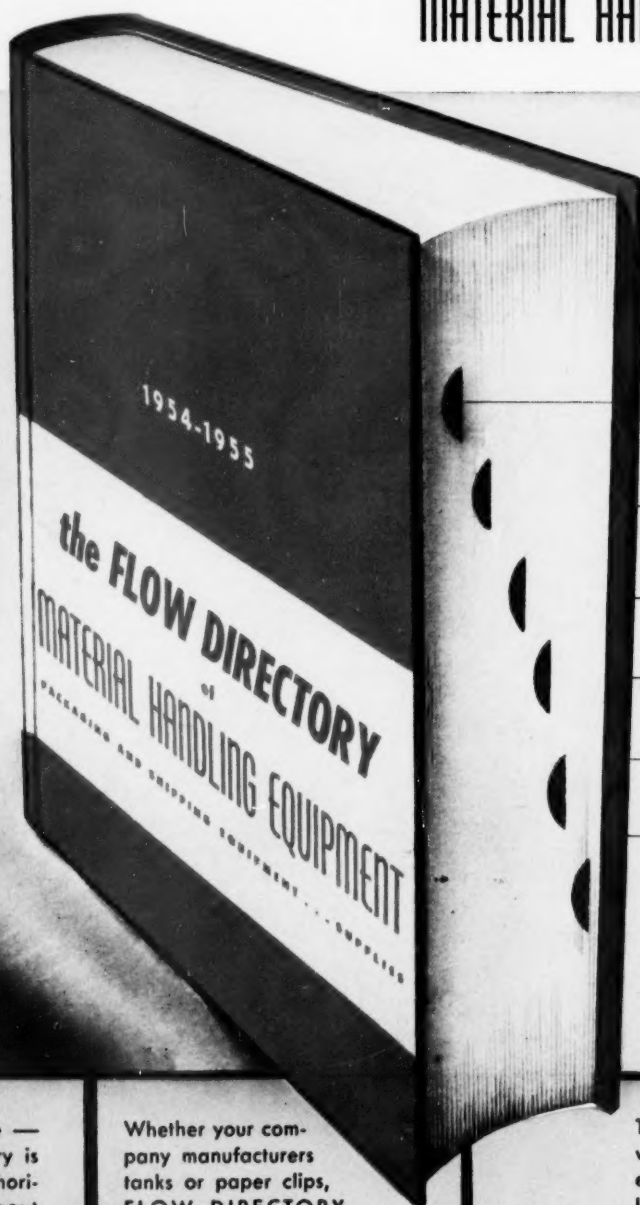
*Write for  
Bulletin*  
**DB-204**

\*Pat. Pending

Circle No. 148 on Reader Service Card for more information

# Ready Now!

## THE ALL NEW 1954-1955 **FLOW DIRECTORY of** MATERIAL HANDLING EQUIPMENT



**NEW TAB INDEX**

**ENGINEERING AND TECHNICAL DATA**

**WHO SELLS OR RENTS EQUIPMENT**

**MANUFACTURERS' CATALOGS**

**TRADE MARK INDEX**

**PRODUCT CLASSIFICATION**

**Right Up To The Minute** — The new FLOW Directory is your own library of authoritative information about material handling equipment and accessories.

Whether your company manufacturers tanks or paper clips, **FLOW DIRECTORY** listings will lead you to purchase the "right" equipment to do your job.

Thorough Product Classification tells you who makes every known piece of M. H. equipment as well as who sells it . . . Identifies it by Trade Mark . . . Provides complete engineering and technical data with hundreds of charts and graphs . . . Includes manufacturers' catalogs showing all types of equipment for every handling task.

### ORDER YOUR COPY TODAY . . .

You will see why the FLOW DIRECTORY is known as industry's "most thumbed" source of information about material handling, packaging and shipping equipment and machinery. Regardless of what questions may come up concerning a piece of equipment, its manufacturers, trade names, or where it can be purchased—you'll find the answers in the FLOW DIRECTORY.

Use the coupon on this page when ordering your new, 772-page Directory. The price is \$6.50 a copy. Sales in Ohio require additional 3% sales tax (20c for each copy). **Make check or money order payable to The Industrial Book Co.**

Please rush me ( ) copy-ies of the **FLOW DIRECTORY**

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

**FLOW DIRECTORY**

1240 Ontario St. • Cleveland 13, Ohio